AGRICULTURAL RESEARCH INSTITUTE

PUSA

PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

HELD AT PHILADELPHIA

FOR

PROMOTING USEFUL KNOWLEDGE.

Vol XXXIV,

JANUARY TO DECEMBER, 1895

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AMERICAN PHILOSOPHICAL SOCIETY
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VOL. XXXIV JANUARY, 1895 NO. 147

Stated Meeting, January 4, 1895.

President, Mr. FRALEY, in the Chair.

Correspondence was submitted as follows:

Letters of resignation were received from Dr. George Strawbridge, Philadelphia; Prof. Isaac Sharpless, Haverford, Pa.

Accessions to the Library were reported from the Royal Asiatic Society (China Branch), Shanghai, China; Anthropological Society, Tokyo, Japan; Société de Géographie, Société Finno Ougrienne, Helsingfors, Finland; Société Physico-Mathématique, Kasan, Russia; Société de des Naturalistes de la Nouvelle Russie, Odessa; Académie Impériale des Sciences, St. Petersburg, Russia; Académie R. Suedoise des Sciences, Stockholm, Sweden; Académie R. des Sciences, Bruxelles, Belgique; Deutsche Seewarte, Hamburg, Germany; Bayerische Botanische Gesellschaft, Munich; Editors of *Il Nuovo Cimento*, Pisa, Italy; R. Accademia dei Lincei, Rome, Italy; Société des Sciences, Physiques, etc., Bordeaux, France; Académie des Sciences, Arts, etc., Dijon, France; Académie des Sciences, La Rochelle, France; Société d'Agriculture, Sciences, etc., Lyons, France; Société Languedocienne de Géographie, Montpellier, France; Société Francoise de Physique, Société de D'Enseignement, Société de Geographie, Rédaction de *Cosmos*, Marquis de Nadaillac, Paris, France; Société des Antiquaries de la Morenie, Saint Omer, France; Royal Society, Royal Astronomical Society, Editors of *Nature*, Meteorological Office, London Eng , Geological Society, Manchester, Eng , Harvard University, Cambridge, Mass , Editor of the *Popular Science Monthly*, Hon Charles P Daly, New York, N Y , Department of State, Department of the Interior, Washington D C University of California, Sacramento

The following death was announced

Prof James A Rhoads, January 2, 1895 æt 73

On motion, the President was authorized to appoint a suitable person to prepare the usual obituary notice Dr Henry Hartshorne was subsequently appointed

Reports of the Clerks and Judges of the election were read, and the report of the election was submitted

President

Frederick Fraley

Vice Presidents

E Otis Kendall, W S W Ruschenberger, J P Lesley

Secretaries

George F Barker, Daniel G Brinton Henry Phillips, Jr ,
George H Horn

Curators

Patterson DuBois, J Cheston Morris, Richard Meade Bache

Treasurer

J Sergeant Price

Councillors

Richard Wood, William V McKean, Richard Vaux,
Henry Carey Baird

Mr J G Rosengarten read a paper entitled "The Paris Book Exhibition of 1894"

Prof Cope spoke of the existence of man in Java in palæolithic times, drawn from the remains of skeletons found in volcanic strata

Mr Henry Phillips, Jr, was renominated for Librarian, and the nominations closed

The amendments to the Laws were discussed

Mr Tatham moved the rejection of the part on reelection Lost

Mr Fraley explained the rules relating to the passage of amendments to the By Laws

Moved and seconded that further consideration of the By Laws be postponed

The report of the Finance Committee was presented, and the appropriations for the year were passed, a legal quorum of members being present

And the Society was adjourned by the President

Stated Meeting January 18, 1895

President, Mr FRALEY, in the Chair

Correspondence was submitted as follows

Letter of resignation from Rev G W Anderson, Rosemont, Pa

Letter from Mr Hoyt, to the President, in regard to a projected National University, was referred to the Secretaries with instructions to report

Letters of envoy were received from the Geological Survey of India, Calcutta, Société de Géographie de Finlande, Helsingfors, Académie R Suédoise des Sciences, Stockholm, K Akademie der Wissenschaften, Vienna, Austria, R Ministero della Istruzione Pubblica, Padova, Italia, Société des Sciences Physiques et Naturelles, Bordeaux, France, Faculté des Sciences, Marseille, France, Musée Guimet, Ecole Polytechnique, Bureau des Longitudes, Marquis de Nadaillac, Paris, France; Radcliffe Observatory, Oxford, England; Geological and Polytechnic Society, Yorkshire, England; Royal Irish Academy, Dublin; Dr. Don Estanislao S. Zeballos, Washington, D. C.

Letters of acknowledgment were received from the Société Imp. des Naturalistes, Moscow, Russia (139); Prof. J. Pomialowsky, St. Petersburg, Russia (144, 145); Académie Hongroise des Sciences, Budapest (142, 144, 145), Société R. de Géographie, Antwerp, Belgium (144), Musée R. d'Histoire Naturelle, Bibliothèque Royale de Belgique, Bruxelles (142, 144); K. K. Universitats Sternwarte, Prague, Austria (142, 144, 145), Section fur Naturkunde des O. T. C. (142, 144), Dr. Friedrich S. Krauss (145), Prof. J. Szombathy, Vienna, Austria (142, 144, 145), Naturforschende Gesellschaft des Osterlandes, Altenburg, Prussia (145); Gesellschaft fur Erdkunde, Berlin, Prussia (145), K. Universitats-Bibliothek, Bonn, Prussia (142, 144, 145), K. Sachs. Meteorologische Institut, Chemnitz, Saxony (145); Verein fur Erdkunde, Dresden, Saxony (142, 144); Oberhessische Gesellschaft für Natur- und Heilkunde, Giessen, Germany (142, 144, 145); K. Gesellschaft der Wissenschaften, Gottingen, Prussia (142, 144, 145), K. Leopoldinische Carolinische Akademie, Halle a. S., Prussia (145), Wetterauische Gesellschaft, Hanau, Germany (144); Vogtlandische Altertumsforschende Verein, Hohenleuben, Saxony (142, 144, 145), Mr. O Bohtlingk (145), Prof. I. Victor Carus, Leipzig, Saxony (144, 145); K. Sternwarte, Munich, Bavaria (145), Prof. G. Sergi, Rome, Italy (144), R Accademia delle Scienze, Turin, Italy (142); Société Linnéenne, Bordeaux, France (145), Société des Sciences Naturelles et Archéologique de la Creuse, Guéret, France (144); Société d'Agriculture et d'Histoire Naturelle, Lyon, France (130, 140), Musée Guimet, Dr. Edward Pepper, Paris, France (145); Sir John Evans, Hemel Hempstead, England (145); Mr Juhlin Dannfeld, Col. William Ludlow, London, England (145); Geographical Society, Manchester, England (145); Natural History Society of Northumberland, etc , Newcastle on Tyne, England (145), Royal Geological Society of Cornwall, Penzance, England (115), Society of Natural History, Boston, Mass (*Trans* xvii, 3, and xviii, 1) , American Academy of Medicine, Easton, Pa (144, 145), Newberry Library, Chicago, Ill (144, 145)

Accessions to the Library were reported from the Geological Survey of India, Calcutta , Société Imp Russe de Géographie, St Petersburg , Nederlandsche Maatschappij ter bevordering van Nijverheid, Amsterdam , Société Hollandaise des Sciences, Harlem Maatschappij der Nederlandsche Letterkunde, Leiden, Z Holland , Académie des Sciences, Cracow, Austria , Naturhistorische Landes-Museum von Kärnten, Klagenfurt, Austria , Gesellschaft fur Erdkunde, Berlin, Prussia , Naturwissenschaftliche Gesellschaft, Chemnitz, Saxony , Oberlausitzische Gesellschaft der Wissenschaften, Gorlitz, Prussia , Verein fur Erdkunde, Halle a S , Prussia Verein fur Lubeckische Geschichte und Alterthumskunde, Lubeck, Germany , Deutsche Gesellschaft fur Anthropologie, Ethnologie, etc , Munich, Bavaria , Geographische Gesellschaft, Bern, Switzerland , Biblioteca N C , Firenze, Italia , Société de Geographie, Lille, France , Directeur de *Melusine*, Bureau des Longitudes, Paris, France , R Academia de la Historia, Madrid, Spain , Society of Arts, R Geographical Society, Editors of the *Geological Magazine*, London, England , Natural History Society, Newcastle on Tyne, England , Royal Irish Academy, Dublin , American Statistical Association, Commissioner of Public Records, Athenæum, Mass Institute of Technology, Mass Historical Society, Mr Robert C Winthrop, Jr , Boston, Mass , Museum of Comparative Zoology, Harvard College, Cambridge, Mass , R I Historical Society, Providence , Travelers' Insurance Co , Hartford, Conn , Editors of the *American Journal of Science*, Yale University, New Haven, Conn , Brooklyn Library, Brooklyn, N Y , Hamilton College, Clinton, N Y , Meteorological Observatory, New York, N Y , Mr William John Potts, Camden, N J , College of New Jersey, Princeton , American Chemical Society, Easton, Pa , Franklin Institute, College of Pharmacy, Dr Walter M

James, Messrs. Willis G. Aale, Henry Phillips, Jr., Philadelphia; Johns Hopkins University, Editor of the *American Chemical Journal*, Baltimore, Md.; Agricultural Experiment Stations, Burlington, Vt, Kingston, R I, Geneva, N. Y, Ithaca, N. Y., State College, Pa.

A framed phototype of the State House was received from Mr. F. Gutekunst, Philadelphia.

Henry Phillips, Jr, was unanimously reelected Librarian of the Society for the ensuing year.

A quorum not being present, no action was taken on the proposed amendments to the By Laws

The appointment of the Standing Committees was referred to the President to take action and report on before the next meeting

Prof. Cope read observations on "Prof. Haeckel's Confession of Faith."

Questions were asked, and comments made by Mr. Ingham and Dr Morris.

Nominations 1302 to 1305 were read.

And the Society was adjourned by the President.

Stated Meeting, February 1, 1896.

Treasurer, Mr. PRICE, in the Chair.

Minutes of last meeting were read and approved.

Correspondence was submitted as follows:

Letters of envoy were received from the Maatschappij der Nederlandsche Letterkunde, Leiden, Z. Holland; Naturwissenschaftliche Gesellschaft, Chemnitz, Saxony; Oficina Meteorológica Argentina, Cordoba, Argentine Republic.

Letters of acknowledgment were received from the Linnean Society of N. South Wales, Sydney (142, 144); Prof. O. Donner, Helsingfors, Finland (144, 145); Dr. Herman Snellen, Jr., Utrecht, Netherlands (144); Academie des Sciences, Cracow, Austria (142, 144, 145), Naturforschende Gesellschaft, Emden, Prussia (142 144, 145), K Geodätisches Institut, Potsdam, Prussia (144, 145) M A Des Cloizeaux Paris France (145), Prof J P Postgate, Cambridge England Royal Observatory, Edinburgh, Scotland (145), University of Nebraska, Lincoln (96–139)

Accessions to the Library were reported from Comité des Conservation des Monuments de l'Art Arabe, Cairo, Egypt, Ministerie van Kolonien, Batavia, Java, Hollandsche Maatschappij van Wetenschappen Haarlem Minister of International Affairs, The Hague, Netherlands, Société Hongroise de Géographie, Budapest, K K Geologische Reichsanstalt, Vienna Austria Aachener Geschichtsverein, Aachen, Prussia, Deutsche Geologische Gesellschaft, K Geodätische Institut Physiologische Gesellschaft, Messrs R Friedländer & Sohn Berlin Prussia, Gartenbauverein Darmstadt Germany Prof Dr Ernest Haeckel Jena, Germany Ministero di Agricoltura Industria e Commercio, Rome, Italy Philological Society Cambridge England, R Microscopical Society, London England, Literary and Philosophical Society, Manchester England, American Geographical Society, American Mathematical Society, Scientific Alliance, New York, N Y, Hydrographic Office, Engineers' Club Editor of the *Naturalist's Leisure Hour*, Mr William H Rau, Philadelphia, U S Departments of the Interior, Labor, War, and Agriculture Anthropological Society, U S Civil Service Commission Prof James C Pilling, Washington, D C, Elisha Mitchell Scientific Society, Chapel Hill N C, Editors of the *Journal of Comparative Neurology*, Granville, O, State Board of Health, Nashville, Tenn Missouri Historical Society, St Louis, Historical Society, Field Columbian Museum, Chicago, Ill, State Historical Society, Iowa City, Iowa, Geological and Natural History Survey, Minneapolis, Minn, University of Nebraska, Historical Society, Lincoln, Neb, Editor of ***El Instructor***, Dr Jesus Diaz de Leon, Aquascalientes, Mex, Asociacion de Ingenieros y Arquetectos, Mexico Mex, Oficina Meteorológica Argentina, Dr Don Estanislao S Zeballos

Buenos Aires, Argentine Republic; Observatorio do Rio Janeiro, Brazil; Agricultural Experiment Stations: Blacksburg, Va, Raleigh, N. C., Uniontown, Ala, Baton Rouge, La, Knoxville, Tenn, Fayetteville, Ark., Columbia, Mo, State College, Mich, Lafayette, Ind., Berkeley, Cal, St. Anthony Park, Minn, Las Cruces, N. Mex.

A paper was read by Mr. Julius F. Sachse, on the "Horologium Achaz."

Remarks were made by Dr. Horn and Dr Brinton.

A paper was read by Mr. Lorin Blodget on "The Scope and Importance of Electricity as a Motor."

Pending nominations 1302 to 1305 were read.

The Committee on Indexing was discharged.

Dr Frazer made a communication on the necessity of the unification of methods employed by experts for the purpose of detecting forgery, and ascertaining the character of handwriting.

Dr. Frazer moved that a committee, composed of Dr. Frazer and Mr S P Sharples, be appointed to report on the general subject of methods useful in the investigation of documents; and that said Committee have power to associate with their number, other specialists who are not members of the Society.

And the Society was adjourned by the presiding member.

Stated Meeting, February 15, 1895.

President, Mr. **Fraley**, in the Chair.

Present, 31 members.

Correspondence was submitted as follows:

Letters of envoy were received from the Royal Statistical Society, London, England; Chief Engineer and Superintendent of Fairmount Park, Philadelphia; Smithsonian Institution, Washington, D. C.

Letters of acknowledgment from the Comité Géologique, St. Petersburg, Russia (144, 145); K. D. Videnskabernes

Selskab Copenhagen, Denmark (144) Physikalische Gesellschaft Berlin, Prussia (144, 145), Marquis Antonio di Gregorio, Palermo, Italy (144), Bibliothèque Universitaire, Lyon, France (145)

Accessions to the Library were reported from the Académie R des Sciences, etc de Denmark Copenhagen, R Statistika Central Byrån Stockholm, Sweden Section fur Naturkunde des O T C, Vienna Austria Naturforschende Gesellschaft Zurich, Switzerland Società Toscana di Scienze Naturali Pisa Geological Society R Geographical Society, Editor of the *Geological Magazine*, Royal Statistical Society London, England Amer Institute of Electrical Engineers Astor Library New York, N Y , Board of Public Charities and Committee on Lunacy, Historical Society of Pennsylvania Pennsylvania Forestry Association Mr Samuel Wagner, Philadelphia, Fish Commission U S Bureau of Education Smithsonian Institution Bureau of the Mint Washington, D C

The stated business of the meeting being the election of members, Secretaries Barker and Horn were appointed by the President as Tellers

The President announced that he had reappointed the Standing Committees of 1894 to act in the current year

Mr Price from the Committee on the Henry M Phillips Prize Essay Fund, reported that a circular had been sent out on May 1, 1893, setting forth the object of the foundation of the Prize and requesting that the essays to be written be placed in the hands of the Society by January 1, 1895 That before that date eight essays had been received by the Society, all in conformity with the regulations adopted by the Committee The Committee presents the names of the following ten gentlemen as a ' Committee of Judges," from whom five names shall be selected by the Society

James C Carter,
Edward J Phelps,
J Randolph Tucker,
Courtland Parker,
C Stuart Patterson,
D C Langdell
Francis Wayland,
William A Keener,
Henry Billings Brown,
W Pinckney Whyte

The matter having been considered by the Society, on motion, the following-named five gentlemen were unanimously selected as a "Committee of Judges," and the acting Secretary of the Prize Essay Committee was directed to inform them of their appointment by letter to be signed by Mr Fraley, President of the Society

James C Carter, of New York,
Edward J Phelps, of Vermont,
J Randolph Tucker, of Virginia,
Courtland Parker, of New Jersey,
C Stuart Patterson, of Pennsylvania

A recess was taken, in order to give members an opportunity to cast their ballots

After recess, the proposed amendments to the By Laws were taken up

Dr J Cheston Morris raised the point of order that proper publication of the proposed consideration of the By Laws had not been made

It having been shown that the Secretary acting at the time had officially reported such publication had been made, the point of order was overruled

Mr Prime moved that the Society proceed to the consideration of the amendments to the By Laws at this time

The motion was recorded, and a division having been called, it was lost

Mr Prime then moved to indefinitely postpone the consideration of the amendments Carried

Dr Greene, inquired whether, by purchase or exchange, he could obtain some odd numbers of the *Quarterly Journal of the Chemical Society*, now in the library of the Society

On motion, the application was referred to the Committee on Library, with power to act

Dr Minis Hays moved to reconsider the motion by which the Society had refused to consider, at this time, the proposed amendments to the By Laws. Carried.

Mr Prime moved that the Committee on the proposed amendments be discharged, and that the consideration of the amendments be indefinitely postponed Seconded and carried

The Tellers having announced that their report on the balloting for candidates was ready, the President instructed them to present it The report declared the following persons duly elected members

2231 Prof Alpheus Hyatt, Cambridge, Mass
2232 Prof W W Goodwin, Cambridge, Mass
2233 R F Glazebrook F R S Cambridge, England
2234 C A M Fennell, Litt D, Cambridge England
2235 Prince Roland Bonaparte Paris, France
2236 A Wallis Budge Litt D London England
2237 Hon James Bryce M P London, England
2238 Sir George Grove, D C L, London, England
2239 William Huggins D C L London England
2240 James Glaisher, F R S, Edinburgh, Scotland
2241 Rev James Legge LL D Oxford, England
2242 Gabriel de Mortillet St Germain en Laye, France
2243 Rev Isaac Taylor, LL D, York, England
2244 Prof William Wundt, Leipzig, Germany
2245 Dr Ernst Curtius, Berlin, Prussia
2246 Charles C Harrison, Philadelphia
2247 Richard A Cleemann M D Philadelphia
2248 Richard Stockton Hunter, Philadelphia
2249 Charlemagne Tower, Philadelphia
2250 Joseph Wilcox, Philadelphia
2251 Henry C Mercer, Doylestown, Pa
2252 Le Marquis Achille de Rochambeau, Rochambeau, France

Reading of the rough minutes was dispensed with, and the Society was adjourned by the President

The Paris Book Exhibition of 1894.

By J. G. Rosengarten.

(Read before the American Philosophical Society, January 4, 1895.)

The November-December number of the Paris *Bulletin du Bibliophile* contains exhaustive notices of the "Exposition du Livre" opened at the Palais de l'Industrie in Paris during the summer of 1894. To those who had the good fortune to see this wealth of illustrations of the whole history of books in France, these notices are most useful, for there was no catalogue to guide the visitor through the vast space filled with the treasures of the collectors of Paris. To those who knew of the exhibition only from brief newspaper notices, it may be of interest to learn something of its extent and importance.

It had special significance in its fine examples of typography, illustration and bookbinding, but besides these it had original drawings and engravings, and an almost endless variety of rarities—a whole history of the making of paper and its uses, a complete series of assignats and great numbers of old specimens of mercantile paper, bills, drafts, shares of stock, stamped papers from the time of Louis XIV to our own, playing cards of every country—a whole series from China, for instance—fans, invitations to dinners, fetes and other entertainments, public and private, notices of service in the National Guard, visiting cards, not the commonplace pasteboard of to-day, but rich in vignettes and other ornamental illustration. There was a wealth of theatrical and other posters, in which the French led the way for an artistic development that has since spread all around the world. Autograph letters and documents, dating back for the last three centuries, were displayed in great profusion, under the title of "graphology." A whole series of papers showing the papermakers' marks for a long series of years was quite an important contribution.

The newspaper collection was very large, from the *Gazette de France*, founded in 1631, through the whole history of French periodicals. A number of *L'Ami du Peuple*, much discolored, is said to be the very copy in the hand of Marat, and stained with his blood when he was stabbed in his bath by Charlotte Corday. There were all the illustrated journals and newspapers so characteristic of French taste.

There was a large collection of ornamental letters and other typographical ornaments of the printers of the sixteenth and seventeenth centuries, their catalogues, the decrees of Parliament ordering the destruction of condemned books and the punishment of the book peddlers who offered them for sale. There were whole series of printed books and very striking examples of bookbinding, engraving, typography, from the very outset to our own day, the bad and indifferent as characteristic as the good and the best. There was a fragment of the *Biblia Pauperum*, xylographic work preceding the discovery of movable types There were beautiful *incunabula* works printed before 1500 and fine examples of printing of the sixteenth century when all the problems of typography were already solved black brilliant unalterable ink paper often uneven but strong enough to resist use and wear all those years type perfectly clear and extremely beautiful illustrations of great artists refined in execution in exquisite taste, wood engravings in harmony with the text yet all these were done with imperfect mechanical appliances but much better done than the work of our own day with all the help of machinery carried to the highest perfection

Then came the Elzevirs with their attractive books and a whole series of printers of irreproachable correctness charming simplicity and a noble air worthy of the books they issued from their presses Publishers and printers alike were then men of knowledge masters of the classical languages writing Latin and reading Greek Later on as books increased in numbers they lost in their typographical value a few printers fought for the old standards of excellence but they were driven from the field and even when the art of illustration was at its best the printing and paper were at their worst

The nineteenth century has seen a still greater divorce between the good and the bad Many books well printed and illustrated are made of wretched paper That used in the *incunabula* has stood four centuries of hard usage without harm That used in some of the books printed in this century of ours has not lasted for forty years Typography was an art in the fifteenth and sixteenth centuries to-day it is an art with and for the few an industry with and for the many It is carried on in vast establishments that have little in common with the old printing office, so admirably preserved in the Plantin Museum of Antwerp and so well reproduced in Flameng's picture of Grolier's visit to the Aldine printing office in Venice some cases full of type some forms ready a press on the model of the old wine presses from which the name was derived Nowadays there would be a great manufacturing establishment with machinery driven by steam or electricity where printing is done with the best mechanical appliances

At the Exposition there was a whole series of such machinery in use to-day It is only to be regretted that there was not a retrospective exhibition from the old hand press the first steam press that of the *Times* of 1814 when the announcement was proudly made that that paper was printed by steam—very primitive it was too—printed on one side at a time By 1834 there were 160 steam presses in use in France By 1847 there was in use in Paris a steam press with four cylinders printing both sides at once for the first time In 1860, rotary presses were introduced, and in 1873 an endless printing press was first used in Paris In 1878, there was exhibited a press printing 40 000 copies an hour and cutting, counting, folding, all done by machinery Since then printing in colors, photogravure, photolithography, and many other applications of the sister arts have been added to the daily use of the printing office, and every day sees the announcement of some new handmaid to the old art preservative of all arts

The cheapening of books has gone hand in hand with the improvements in typography and its allied arts, but at the same time books dear to the bibliophile are still being produced, and the last decade of the century, now fast drawing to its end, will leave to posterity a rich heritage of works representing splendidly all the forms of expression of art in books. The renaissance of making fine books is comparatively modern, at one time it was limited to mere reproduction, but now it is marked by progressive originality, sometimes like the impressionists in painting startling by their struggles for novelty, but often charming by the good use made of the latest mechanical inventions The French publishers have succeeded in making each a specialty, and the great books on architecture and decoration, the Bibles, the classic French authors, on art and on bibliography, will perpetuate their names among the world's master printers

The Exposition du Livre was rich in typography, but it was also rich in illustrations of every epoch and every kind The oldest illustrators were the miniaturists and illuminators of the Middle Ages. It is in the manuscripts anterior to the discovery of Guttenburg that their art can be best appreciated One of the rooms on the lower floor of the Palais de l'Industrie was devoted to manuscripts, and many of them were rare marvels of beauty, all of real interest Printing by the end of the fifteenth century supplanted manuscripts and illumination, an art that has only been revived in our own day The learned chief of the famous Museum of the Louvre has told the sad story of a miniature painter for manuscripts, who after holding rank at the head of the Guild, saw his talent made useless in competition with the first printers, and he soon lost his occupation and the means of his livelihood The old art was killed, but it had the honor of compelling its new rivals to imitate the work of their predecessors In the best *incunabula* there is a constant effort to make the printed page look like manuscript The decoration of the printed *Livres d'Heures* strove to imitate the models which scribes had carried to a rare degree of perfection. They were works of art and luxury, and do honor to the names of Vérard and Pigouchet, Kerver and Simon Vostre. Under the influence of Italian renaissance they worked a great change, visible in the books of the sixteenth century, with their large plates illustrating the text, the borders surrounding, the figures inserted in the pages The designers and the engravers were artists of the first excellence

The next age, that of the great masters of French literature, was too busy with the text to care for illustration, beyond an allegorical frontispiece or portraits, such as that of Malherbe in the edition of 1680, or of Corneille in that of 1644, excellent examples of engraving and valuable historically In religious books and in funeral orations there were still illustrations. The funeral sermons of the seventeenth century were not only great masterpieces of pulpit eloquence such as Bossuet's immortal sermons but they were printed with noble and serious splendor The great period of illustrated books was that of the eighteenth century and it was at its best from 1750 to 1780 The poorest volumes had exquisite vignettes, and worthless verse or prose was made attractive by the capital illustrations and a wit of the time said that the *beaux esprits* were like shipwrecked mariners ils se sont sauvés par les planches The school of French illustrators of that time with its traditions its discipline its great artists each with his own style yet all full of unity in their collective work really illustrative of the text was admirably exhibited With the troubled times of the French Revolution art too declined but it revived with the romanticism of our own century and showed thoroughly French liveliness Then after Meissonier and other really great masters came a new eclipse from 1850 to 1870 when Gustave Doré was the only famous name his powerful inventive genius and his extreme abundance of work marred by careless execution With 1870 began a new period of works of art and luxury Many of them have already passed into oblivion or that abyss of second hand stalls and low prices that properly mark their real value or valuelessness but there remains a wealth of really good work Many of the original drawings by the best artists were in the exhibition and not only their designs for books but for fans posters and advertisements The engravers on wood too were there and the original designs from many famous hands were placed alongside the reproductions to show how much credit belongs to the engraver and the perfection of the typographic and other processes both in black and white and in colors Even in photographic illustrations there was evidence of art in the choice of subjects in the grouping and composition A very competent critic M Léon Gruel himself one of the great Paris bookbinders and the owner of a remarkable collection of bindings and of everything that illustrates this fine art has given a capital account of the value and importance of the retrospective exhibition of bookbinding to which he was one of the largest contributors He loaned a copy of an unknown edition of a grand folio Speculum morale without date or name of printer but certainly not later than 1477 for the binding is dated 1478 Gruel describes the binding with all the love of a collector and the critical acumen of a bookbinder The book was bound by one of his great predecessors as a gift of the Emperor Maximilian and it is both outwardly and inwardly a fine example of the artistic in printing illuminating and binding The next of M Gruel's exhibits has in gothic characters the name of the binder, for in the fifteenth century and in the beginning of the sixteenth century the bookbinders took an honest pride in their work and perpetuated their names on it often by religious texts in which they commended themselves to the protection of their patron saints Each bookbinder had his own particular saint and St Sebastian St Maurice St Barbe St Nicholas, are thus stamped on the bindings often with an humble petition for protection signed by the bookbinder and there were books of 1519 and 1526 and 1529 and 1540 so bound and marked the last a Martial bound for Charles V by a bookbinder of Amsterdam with the arms of that city and his own name in full as well as the arms and motto of the great Emperor In the good old times every publisher was his own printer and bookbinder, for in the fifteenth and sixteenth centuries no books were sold unbound The bookbinders went from city to city in search of employment from the printers and publishers and only in the monasteries were there monks who were employed as authors illuminators and binders Every printer and publisher had his own device and legend which was reproduced on the binding as well as on the title page The Elzevirs the Plantins the great printers of Amsterdam and Antwerp and Lyons as well as those of Paris thus made the binding an integral and important part of their books and the books with the cypher of Francis I and the arms of Paul V the Groliers and the Maiolis all reveal the owner and the binder

There was a fine folio Erasmus printed in Venice in 1508 annotated throughout by Grolier in his own handwriting with a drawing by him of a medal referred to in the text and with his familiar legend Io Grolieriz Lugdunen et amicorum written on the last page by the owner There was a Venice Homer of 1540 bearing the name of an amateur binder of great merit but hitherto unknown There were bindings for Christian VII of Denmark and for Louis XIII as well as those for famous collectors of less rank bearing the names of the binders, and M Gruel exhibited a bound copy of the rules of the bookbinders of Paris 1750 with the name of the binder the date of his birth of his marriage of his apprenticeship and of his becoming a master workman while the great Padeloup contented himself with putting his name modestly under the title Among the curious bindings were those of pretended books really vessels for liquor On one Franklin s portrait is preserved in a medallion another has the title L Esprit de Rousseau, and as such false books were said to be for the use of country clergymen there was a special joke in making Franklin and Rousseau the enemies of the church contribute to the comfort of its servants During the French Revolution the nobles had their books bound with republican devices concealing their arms The Restoration had a wealth of great bookbinders and their successors of our own day no matter how strong their rivalry were close neighbors in the cases in which some of their finest examples were gathered at this Exposition du Livre There was a wealth of curious historical material the charters of the bookbinders associations or guilds of the fourteenth fifteenth and sixteenth centuries their accounts inventories tools etc and a complete library of books on bookbinding now quite a collection in numbers

The Exposition du Livre had its historical side Great rooms were full of material of the most precious kind the whole story of French caricatures was told on its walls French art in every form of application to books and printing of every kind was splendidly exhibited and besides there was a capital exhibition of every industry related to printing—inks, paper, types, lithographic and photographic and other processes with the books and illustrations showing their practical uses and application It was such a collection as only the enthusiasm of Frenchmen could bring together and yet it lost much of its value and interest for want of a catalogue, for the Exposition must end the wonderful collections be returned to their owners and the opportunity of studying the history of printing and book making in its best sense will be lost It is almost impossible to hope that such an exhibition can soon if ever be organized here The French have a wonderful talent for organization and the great collectors seem to have united in this Exposition giving the loan of their treasures for a long period arranging them with admirable skill and sharpening the zeal and enthusiasm for collecting which is useful only when it serves to make the world wiser by enabling it to take stock of the work of past years to trace the rise and growth and changes of an art and none better deserves such painstaking study and research than printing with its kindred and allied industries and the Paris *Exposition du Livre* was certainly honorable to French collectors to printers and binders and artists all joining to show how much the world owes to France for the past and for the present of the art of printing revealed in this exhibition

There was a letter in the *Nation* of September 20 last describing the Paris Exposition du Livre critical and in the main uncomplimentary In looking back on my own visit to the Exposition I recall the very instructive and interesting things I saw there and those of little value have been forgotten Still I owe to the *Nation* the information that Paris has its École du Livre —what it is or where it is the writer does not mention nor where we can find anything about it The *Nation* does speak in praise of the foreign exhibits the publications of the University Press of Cambridge, and says that a handful of illustrated papers and magazines represented the books of Great Britain and a great array of names of illustrators booksellers journalists and diplomats headed by the ambassador of the United States in Paris the members of the American section, but there was nothing from this country or from Italy Spain or Germany There was a small but comprehensive exhibit from Denmark showing to advantage the great Scandinavian illustrators whose names are too seldom heard out of their own country intelligent interpreters in good wood engraving and their work published in volumes to whose excellence printer binder and papermaker have all contributed In Copenhagen, *too* there is a ' School of the *Book*,' apparently on much the same lines as the institution of that name in Paris The *Nation* praises in a half patronizing way the retrospective and documentary part of the Exposition the wealth of the private collections especially of bookbindings but in the main condemns the exhibition as a whole That it deserves more than this is I think clear from the abstract you have heard of the articles describing it in the *Bulletin du Bibliophile*, the venerable organ of French book lovers, for it was founded in 1834.

M Gruel points with pride to the work of early bookbinders, who like himself have also been bibliographers in the best sense of the word He calls attention to the handiwork of the Plantins who like their contemporaries signed their bindings with the same bookmark that designated their printing Among these were Philippe Pigouchet Denis Roce Robert Macé the Gryphes of Lyons the brothers Angelius Jean Bogard Madeleine Boursette widow of François Regnault Jacques Dupuis and the Elzevirs Christopher Plantin was born near Tours in 1514 His first occupation was that of a bookbinder which he learned in the workshop of Robert or Robinet Macé at Caen who was both printer and book binder Plantin went to Antwerp where he became famous as founder of the printing and publishing house that existed in his family from 1549 until 1876 when it was made a public museum one of the most interesting indeed the only one of its kind in Europe and well worth a visit M Gruel shows that in 1532 Plantin bound the account books of the city of Antwerp that he added to his other pursuits that of fine work in leather boxes covers coffers richly decorated—an artistic handiwork that Gruel too has made part of his own trade

In the Plantin Museum at Antwerp there is a single example of Plantin s binding with his mark and the metal stamp is preserved along with the type and the woodcuts used in the volume M Gruel reproduces from Plantin s account books the items that show his industry as a bookbinder giving the prices of the material he used, the mark a compass with the motto Labore et Constantia the press the wages paid his journeymen and the bills rendered to his employers thus bringing us back to the time when bookbinding was an art in the hands of artisans who made it part of their business of printing and illustrating books

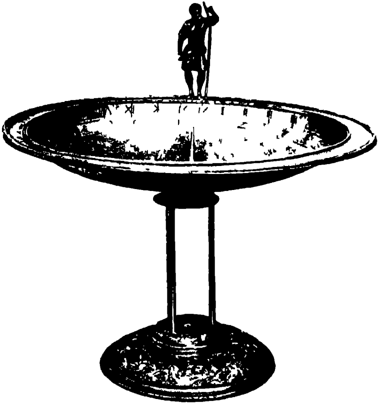
The catalogue of the Museum Plantin Moretus by M Max Rooses, the keeper is interesting even to those who have not enjoyed a visit to this curious relic of the faithful pursuit of one business by the same family for over three hundred years In 1549 when Plantin established himself at Antwerp that city was next to Paris in importance He soon gained reputation for his bindings and his other work in leather He became a citizen in 1550 and that year a member of the Guild of St Luke as a printer In 1555, he printed his first book but his work was interrupted on a charge of heresy and he took refuge for a year in Paris returning to Antwerp where he was protected and employed by Philip the II Cardinal Granvelle, and other notable persons He printed under their auspices a Bible in five languages Breviaries and Missals and Liturgies for Spain for a privilege from Rome for Spain and its colonies was the foundation of his fortune In 1576 he moved into the building which to day is the Museum perpetuating his name and work His son in law Moretus, succeeded in 1589 on his father in law s death, to the business and transmitted it with its traditions on his death, in 1610, to his two sons One died in 1618 the other in 1641, and was succeeded by his son, who died in 1674 The business passed then to his son, who died in 1692, and then to his son who died in 1730 and was succeeded by a brother who died in 1757 his son continued it until 1768 his widow until 1797 , their four sons successively until 1820 and they in turn were followed by one of the next generation down to 1865 and he by a younger brother, who died in 1890 having sold the printing office with all its contents to the city of Antwerp in 1870 The last book bearing the Plantin imprint is dated 1866 but work was continued until 1867 and the last tax paid as printers was in 1871

The Museum is rich in works of art principally portraits of different members of the family and the authors and artists employed by them Rubens and his pupils and contemporaries and successors are well represented The books of account show exactly what was paid to them for these pictures and for the drawings for the illustration of the books printed by the Plantins The library is rich in illuminated and other rare and precious manuscripts in editions of the Plantin publications from 1555 down to the last issue from their press in 1866 in autograph letters and papers relating to their business during all these years in copies of the Antwerp *Gazette* from 1620 the oldest newspaper in Europe The shop still contains on its shelves the books that used to be on sale with price currents of books of 1592 1628 1642 and the Index expurgatorius of 1569 and 1571 to guard against offering books prohibited by Rome or Spain The printing office with its antique appliances and the memorials of the most famous readers and correctors of the press many of them men of great learning are piously preserved The font of type used in all those years is well preserved and so are the old presses The library is rich in incunabula and rare printed books from Guttenberg down and by way of contrast a complete set of the *Journal les Debats* from 1800 to 1871 Autograph letters fine wood and steel engravings maps plans portraits vignettes engraved arms book plates busts statues are displayed in great profusion The dwelling rooms are preserved in their ancient order and show just how well to do people lived in the sixteenth century There are over fourteen thousand volumes in the Plantin Moretus Library The main library was built in 1640 and is still as it was then The archives of the printing house cover all its business from 1555 to 1864 and the foundry where the type were cast still retains its antiquated appliances There is no counterpart of the old printing office thus piously preserved down to our own day

The question naturally suggests itself if the first printers imitated manuscript how did Latin type come into use The earliest books were printed with types resembling the styles for book writing then popular in the middle of the fifteenth century Pointed Black Letter was preferred for church service books but for books for the laity a simpler form of black letter was preferred semi or pointed Gothic In 1486 the German character was first used in Germany The first printers of Italy themselves Germans, Sweinheym and Pannartz (1465–73) began work with new types of the Roman form but with many features of the black letter In 1487, Hahn, a rival German printer, began printing in another Roman letter, which also showed a preference for the Gothic form The first really good form of Roman, adopted everywhere to the suppression of all others, was made by Jenson of Venice, and shown in his *Eusebius* of 1470 Accepted by the educated, it was, however, rejected by the common people, who were just beginning to buy books, and Jenson had to print popular books in Gothic characters, and the most beautiful contemporary books of Paris, the Netherlands and England were in pointed type The first book printed in England in Roman type was Henry VIII's treatise, which secured for him the title of Defender of the Faith, so printed by Pynson possibly in deference to Italian taste and in compliment to the Pope Aldus Manutius added a new style, the Italic, based on a written style then popular with copyists The Italic, first shown in the 1501 *Virgil*, differed from modern Italic in several respects, notably in the fact that the capitals are upright and stand apart from the text. The Lyons founders, moved by the popularity of Italic, soon after produced the *Cursiv François* or *Civilité*, an unreadable letter. The disuse of black letter in France was largely due to Tory of Paris, and his *Champ Fleury* of 1526 Caxton's type was distinctly Flemish, that of his successors resembled the black letters of the printers of the day of Paris and Rouen. Black letter maintained its popularity in England and the Netherlands, after it had fallen into disuse in France. English printers had no type foundry until John Day established his, 1546–84, and had to accept Dutch type with their mannerisms. English readers showed a marked preference for black letter, and it was used in some of the most popular books, such as the first edition (1525) of Tyndall's *New Testament*, Coverdale's *Bible* (1535), Cranmer's *Great Bible* (1540), and the authorized Prayer Books In the reign of Roman Catholic Mary, Roman was the proper text for books of devotion, but under Protestant Elizabeth, Prayer Books in black letter had the preference. Fox's *Acts and Monuments* (1560) was in black letter. Soon after the printers evinced a partiality for Roman for English classics The writings of Shakespeare and Bacon appeared in Roman. Black letter was out of fashion at the close of the sixteenth century."—*Chambers' Encyc*, *s. v.* "Types."

"The earliest known representation of a printing press is dated 1507, and it pictures an apparatus which is little more than a modification of the ancient wine press—hence the name."—*do.*, *s. v.* "Printing," p. 410.

Under the head of "Black Letter," *Chambers' Encyc* says · "The first types were copies of the letters in use in the middle of the fifteenth century. Two sorts of letters were in use—*Roman* from the fifth to the close of the twelfth century, when they gradually began to pass into what has been called *Gothic*, which continued till the sixteenth century, when, in most European countries, they were superseded by Roman letters. The classic taste of Italy could not long tolerate Gothic, and it was modified until it assumed the shape to which the name of Roman has since been



HOROLOGIUM ACHAZ

CHRISTOPHORUS SCHISSLER GEOMETRICUS AC ASTRONOMICUS ARTIFEX
AUGUSTÆ VINDELICORUM FACIEBAT 15 8

NOW IN THE CABINET OF THE AMERICAN PHILOSOPHICAL SOCIETY

given The first works printed with these new types were the two beautiful editions of Pliny s *Natural History* one by John of Spires at Venice in 1469 the other by Nicholas Jenson also at Venice in 1472 Aldus Manutius attempted in 1501 to introduce the Aldine or Venetian Italic but the Roman soon spread from Venice all over the west of Europe Although the Germans still continue the use of a form of black letter about one half their books are in Roman

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Horologium Achaz (*Christophorus Schissler, Artifex*)

By Julius F Sachse

(***Read before the American Philosophical Society February 1 1895***)

Among the scientific apparatus, models and philosophical instruments preserved in the cabinets of this Society, there have been conspicuously displayed two brass plates, finely wrought, engraved, chased and gilded, without however, bearing any label explanatory of their former use or import

As a matter of fact they are parts of a unique instrument, the equal of which is not to be found in any museum or scientific collection in the world

Unfortunately, several parts of this instrument are missing, and among them the mythological figure which once stood upon the base, and elevated or held up the larger plate or basin The gnomon or rod used to cast a shadow, as well as the apparatus held aloft by the figure upon the rim, whereby a fine pencil of light was thrown upon the dial in place of a shadow (Photo Sciaterica), are also wanting, the magnetic needle in the small compass in the base has also long since disappeared

I have endeavored to restore this instrument as well as I could, in the absence of any definite account of how it was in its original state, for no published description was allowed by the censorship of the press, for reasons which I will explain in the course of this paper

It will be noticed that I have substituted a tripod between base and dial, in place of the lost figure The instrument was known by the mystics and philosophers of old as an "HOROLOGIUM ACHAZ," or Dial of Achaz

The smaller of the two pieces measures five and three-quarter inches in diameter, and it formed the base of the instrument It is made of an alloy, of which silver and copper form the chief ingredients In a raised centre it contains a compass, one inch in diameter. The intervening space is arranged in two circles, filled with mythological deities and mythical marine monsters, all finely wrought and chased (*ciselirt*).

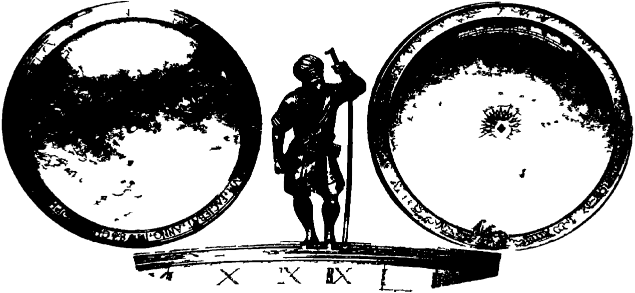
If we reverse this base, we find beneath it a finely engraved plate heavily gilded with an amalgam of fine gold. It is slightly concave. This plate is divided into five panels; two of these divisions are graduated for different elevations and bear the following inscription, viz.: "Horologii Achaz hydrographica declinatio ad elevat: Poli 44–45–46, Gradv:" and "47–48–49," respectively. Two others contain pictorial scenes which will be described later on. The helix in the centre, which forms the fifth division, contains the following description, viz: "*Notat concha isthac hemiciclea capitis 38 Esaia miracvlvm · nam hanc si aqva labrvm vsque impleveris vmbra solis 10 imo: so gradibvs retrorsvm fertvr signvm ac gradvm solis: quin etiam horam diei vvlgarem qvamcvnque vna cvm planetarvm qvas vocant horis denuncians*" (*Translation*. "This semicircular shell explains the miracle of the 38th chapter of Isaiah. For if you fill a basin altogether with water, the shadow of the sun is borne backward by ten degrees. Moreover, it indicates any common hour of the day whatever, together with that of the planets which they call hours.")

The larger piece is a basin-shaped plate, made of common brass or gun metal, with a flat, moveable rim one inch wide. Upon this are engraved the signs of the zodiac. On the reverse of this rim, which surrounds the large basin, is engraved the following inscription: "CHRISTOPHORVS SCHISSLER, GEOMETRICVS AC ASTRONOMICVS ARTIFEX AVGVSTÆ VINDELICORVM, FACIEBAT ANNO 1578."

The centre or concave part of this plate is ten inches in diameter, and is geometrically divided into the different planetary houses. The depth of the basin is one and three-quarter inches, and the whole once formed the dial of the instrument.

The rim is surmounted by a brass figure, three and three-quarter inches in height, representing an ancient prophet or astrologer, with the left hand extended so as to hold the "gnomen" used to cast the shadow or to throw the requisite pencil of light.

This instrument was formerly used, nominally, for calculating



HOROLOGIUM ACHAZ

REVERSE OF DIAL M ERO R O O N FACE OF DIAL

FIGURE UPON THE RIM 8 E NO F R NA

nativities, and in the various occult studies wherein the hour of the day or night, and the position of the planetary system of the heavens took a prominent part, as by its aid it was possible to see, not only the true time of day by sunlight, and at night by moonlight, but other solar phenomena, such as the true time of sunrise and sunset; the orb's place in the twelve houses of the zodiac; its perigee and apogee; its height above the horizon, the relative length of the day and night, as well as many other astrological data.

There is, however, another peculiarity about this instrument. In the hands of the Astrologus or Magus of the sixteenth century, it was capable, at the will of the operator, of apparently reversing the laws of nature. Thus, if the basin was filled with water or any other translucent liquid, the time marked was advanced or retarded as many degrees as equal the angle of refraction; thereby repeating the miracle of Isaiah.

To thoroughly illustrate this latter fact, as well as the somewhat obscure inscription within the helix upon the plate beneath the base, and on the two engraved panels, it will be necessary for us to make a practical test of the apparatus and to take up the references to the instrument as given in Holy Writ, even though it may reflect somewhat upon the integrity of the prophet of old, who evidently had some practical [illegible] of the then unknown laws of refraction.

By referring to [illegible]hirty-eighth chapter of the Book of Isaiah, in the eighth verse we read ·

"Behold, I will bring again the shadow of the degrees, which is gone down in the sun-dial of Ahaz ten degrees backward So the sun returned ten degrees, by which degrees it was gone down."

This is what is known as the great miracle of Isaiah, and is portrayed in one of the engraved panels upon the base plate of the instrument. It will be noticed that the invalid sovereign is in his bed, while the prophet is pointing to a sun-dial, which, however, in the representation, is a vertical one—a precaution that was resorted to for obvious reasons by the Augsburg artificer, to distract attention from the true character of this instrument, in case it should ever fall into the possession of the profane.

The other engraved panel on the base plate illustrates the twenty-first verse of the same chapter of the Book of Isaiah, viz.: "For Isaiah had said, Let them take a lump of figs, and lay it for a plaster upon the boil, and he shall recover."

We have here portrayed the consummation of the miracle. The king is seen seated upon a throne, with his right leg extended, while the prophet is applying a poultice of figs to the wicked carbuncle. An attendant, in the rear, it will be noticed, holds a basketful of the same remedy in reserve.

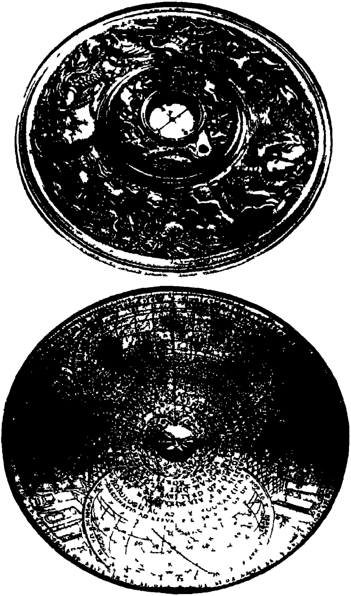
The above mention of the "Dial of Achaz" which had the property of going backwards ten degrees at the command of the old prophet, is the earliest reference to any instrument for the purpose of marking the true time of day of which mention is made in the world's history.

Achaz, who was the son of Jotham and the eleventh king of Judah, about the year 771 B C went to Damascus to greet his benefactor, Tiglath Pileser He saw there a beautiful altar, and sent working drawings of it to Uriah, the priest in Jerusalem An altar was completed against his return. He likewise set up the dial which is mentioned in the miraculous cure of his son Hezekiah, thirteen years after the death of Achaz. This is the first dial upon record, and is 140 years before Thales, and nearly 400 years before Aristotle and Plato, and just a little previous to the lunar eclipses observed at Babylon as recorded by Ptolemy.

That this instrument and its peculiar properties were not unknown to the scientific faculty of the Helmstadt University, is shown by the Memoirs of Uffenbach, that were published at Ulm, in the early part of the last century. The University a[illegible] time was presided over by Dr Johann Fabricius (Altdorfinus) who was the former tutor at Altdorf of Johannes Kelpius, Magister of the Rosicrucian Community, on the Wissahickon, in Pennsylvania (1694–1708).

Zacharias von Uffenbach, the celebrated scientist and traveler, and former classmate of the younger Falkner at Halle, notes in the Index to his Memoirs, *Sun-dial,—Hiskia, Where the Shadow Turns Back, Curieux,* ii, 542. But on referring to the place indicated, no reference whatever to the subject is to be found. The inference is that the whole matter was, at that time, suppressed by the Censor. There is, however, a reference to the instrument by the same writer in another volume of his Memoirs (Vol. i, 252) of which no mention is to be found in the Index.

Uffenbach, who was always careful to note down the most minute particulars of any special scientific matters brought to his notice, states that, while on a visit to the University Library, Abt Schmid called his attention to a description of this peculiar instrument, and then continues that "he would attribute the especial discovery of



HOROLOGIUM ACHAZ

BASE WITH COMPASS ENGRAVED BASE PLATE

(SIZE ABOUT TWO THIRDS OF ORIGINAL)

this peculiar sun dial to an atheist, and that it would be apt to give such as had no faith in miracles the idea that this was the sun dial which, by the retrogression of its shadow, furnished the sign for King Hezekiah, or that it was a similarly constructed instrument having the same property, and which being known to the prophet, he, on that account proposed that particular test to the King."

During a late visit to Europe a careful search was instituted in the various museums for a duplicate of this Horologium but without result. So scarce and sought after are the specimens of Schissler's ingenuity, that the great Germanic National Museum at Nüremberg contains, I think, merely a small pair of dividers from this great artificer. The museum of his native city Augsburg, contains nothing whatever of his handiwork.

Failing in my efforts to find a duplicate or a similar instrument in either Germany or France, by the aid of which our own specimen might be restored to its original condition, as a matter of interest, I next endeavored to obtain whatever information was to be had relative to the ingenious mechanic whose name adorns the rim of our specimen. Here I was more successful, thanks to the courtesy of Herr Hans Boesch, Director in Chief of the Germanic National Museum. The following references to the artificer were found in the Archives of the Museum, viz.:

• In Paul von Steffen's account of the "Kunst, Gewerbt, u. Handwerks Geschichte der Reichsstadt Augsburg,' it is recorded, that more noteworthy than any one is Christophorus Schissler. This man, according to his apprenticed trade, was a brassworker in a small way, or brazier. His talents, however, led him into geometry, mechanics and astronomy. Therefore, he subsequently called himself a geometric and astronomical master mechanic (*Werkmeister*).

From this artist, continues the old chronicler, there stands in the Bodleian Library at Oxford, England, a solid gold quadrant, which measures more than a Rhenish foot square, and has a weight of six to eight pounds. Upon this instrument is engraved in large letters, "CHRISTOPHORVS SCHISSLER, GEOMETRICVS AC ASTRONOMICVS ARTIFEX, AUGUSTAE VINDELICORUM FACIEBAT, 1579."

I will here state that this quadrant was also known and described by Zacharias von Uffenbach, who states (Vol. iii, 101, 102) that it was of pure gold, and was covered with scales, divisions and calculations, which he thought were poorly executed. The

Librarian of the University at Oxford, however, differed with him, and gave the opinion that the calculations were of even greater value than the precious metal of which the instrument was constructed.

Uffenbach concludes by stating that he would rather have a quadrant with more modern calculations and divisions, and made of gilded brass, as then he would not be afraid to put it to a practical use. He also verifies the dimensions, weight and inscription as above noted.

Speaking of the inscription, the question was raised here some time ago as to the meaning of the word "VINDELICORVM" as applied to this instrument. I will state that the term denotes that the artificer was descended from the ancient German race of the Vindelici, whose chief city, in former times, was "AUGUSTA," therefore "AVGVSTAE VINDELICORVM"—the modern Augsburg.

Again referring to the old records in the Germanic National Museum, it is there stated that Schissler constructed numerous ingenious scientific apparatus and automata for the Emperor Rudolph II of the Holy Roman Empire. This fact alone, continues the old chronicler, furnishes ample proof of the repute that the artificer had gained by his proficiency in the mechanical arts.

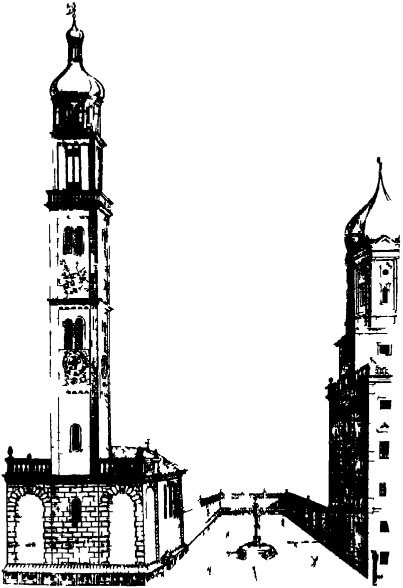
In the year 1600, Schissler was commissioned by the authorities to survey and plot his native city and the suburbs as well as the Imperial Bailiwick (Reichs Landvogtey). The plan of the city was engraved on copper by Alexander Mair, a noted artist of that day. The other plans were stored at the Land Office. (During my search at Augsburg, none were to be found.)

In the year 1606, Schissler constructed a large *Sphæra Armillaris*, which he presented to the magistrates of his native town, and which was there exhibited for many years in the "Stadt-Bibliothek," but is now missing.

In conclusion, the chronicler states, "in these days (early in the seventeenth century) many of our learned scientists became proficient in Geometry (*Messkunst*) but chiefly in Astronomy."

An equally interesting reference was found in the old "Memorial Buch," wherein one Hector Maire mentions that, in the year 1561, Christophorus Schissler constructed the four large sun-dials upon the "Perlachthurm," at Augsburg, where they still, after a lapse of three centuries, mark the time of day.

The Perlachthurm is one of the peculiar landmarks of the ancient



THE SUNDIALS ON THE PERLACH THURM

AUGSBURG GERMANY

CHR STOPHORUS SCH SSLER ART FEX 1 61

ROM AN O D ERGRA NG B E HESS

city, at the confluence of the Wertach and the Lech, and commands a view of the surrounding country. This solitary tower, of which I have here a contemporaneous engraving by Hess, dates back to the tenth century, but has been altered and restored upon several occasions, notably towards the close of the sixteenth century, when it was raised by the celebrated architect, E. Holl, to its present height of 326 feet. It was on this occasion that Schissler was commissioned to construct the four sun dials, two of which are seen in the engraving. This tower was built as a watch tower, to discover the approach of the enemy. At the present time it does duty as a look out for the fire patrol.

The old chronicler goes on to state that Schissler received the sum of 400 florins for his labor on the four dials, while his wife was given 6 florins for assisting her husband.

The account also says that the survey of the city was commenced in 1598. Schissler also surveyed, with the aid of his son, the Lechstrom, completing the work in 1603. From official records it appears that for five years labor he received the sum of 500 florins, in addition to his expenses.

The Memorial Buch further states that his Meisterstück or *chef d'œuvre* was placed in the Mathematical Hall of the Zwinger, or Royal Museum at Dresden. It was a *quadratum geometricum*, and bears, beside his usual inscription, the date 1569. This apparatus was for the purpose of measuring both elevation and distance, in which the divisions were given by transverse lines.

He also constructed an ingenious odometer or measuring wheel (*Wegmesser*) which is described by Kirchner, p. 221, Ed. Colon. 1647.

From the above enumerations of Schissler's handicraft, we are safe in assuming that the Augsburg artificer was one of the most ingenious mechanics of his time.

In searching for other scientific authorities who were acquainted with instruments having a similar property, and had left a record of the fact, it is found that Varenius, in his *Geographica Generalis*, makes some general mention of what may be called a refracting dial.

Leybourne, in his work on Gnomonicks (London, 1682), notes that such dials were to be made in two ways, one where the gnomon was hidden all under the water, the other, where the point was above the water. Our own specimen was evidently one that combined the two principles, a conclusion arrived at by the space for the stylus on the meridial line, which has been replaced, and the figure upon the rim, which evidently supported the elevated gnomon upon the same line.

Ozanam, in his *Recreations* (London, 1708), also gives a problem "to describe a dial by refraction."

The first public mention of, or reference to, the phenomena of the refraction of light was made by Willebrord Snellius (1591–1626), the celebrated mathematician, shortly before his death, or about a half century after it had been practically demonstrated by the Augsburg artificer, as is proven by the specimen here brought to your notice.

After the death of Snellius René Descartes, by some means, came into possession of the former's experiments on the refraction of light, and published an account of the phenomena, in his *Principia Philosophiæ*, 1637, with several illustrations, from which we may obtain a possible clue to the missing parts once elevated by the figure upon the rim of our interesting specimen.

Schotus, in his *Magia Universalis*, published in 1657, also illustrates the refraction of light, Pl. xxiii, by a simple experiment and plate. None of the above references to a refracting dial, or the refraction of light, however, make any reference to the miracle of Isaiah, thus showing that our scientific relic is unique of its kind, and was known only to persons who were intimately versed in the higher phases of occult philosophy.

The written records of this venerable Society, so far as I have been able to discover, fail to show just from whom this interesting relic of Christopher Schissler's handiwork was received, or even when it came into possession of the Society.

Tradition, however, connects this instrument directly with Dr. Christopher Witt, the last surviving member of the Rosicrucian Community, which two hundred years ago was located on the banks of the romantic Wissahickon, in the vicinity of Philadelphia, and usually known as the "Hermits on the Ridge." Dr. Witt, prior to his death in 1765, gave some of his philosophical and scientific apparatus to the local Philosophical Society, then presided over by Benjamin Franklin, among which presumably was the specimen under discussion.

It will here again be necessary to take a short retrospect, viz.: Between the years 1691–1693, a company of religious and philosophical enthusiasts or mystics was organized in Germany. Their purpose was to escape the religious and secular proscription under which they suffered by emigration. They naturally cast longing eyes towards Pennsylvania where liberty of conscience was assured.

These enthusiasts had all received a liberal education, six of the number being clergymen. All were members of the theosophical brotherhood known as "Rosicrucians," and were under the leadership of Magister Johann Jacob Zimmermann, who, as you will see by reference to the reports of the Royal Society, was one of the most noted astronomers of the time in Europe. It is to the possession of this philosopher that this instrument has been traced, prior to his leaving Nuremberg. When finally the "Chapter of Perfection," consisting of the mystic number of forty was completed, the start was made from the two rallying points Halberstadt and Magdeburg, for Rotterdam whence they were to embark for the New World.

Upon the very eve of embarkation Magister Zimmermann died. The vessel containing his effects sailed for America, and Johann Kelpius was elected Magister in his stead; under his guidance, the party of mystic philosophers came to these shores, and upon the romantic banks of the Wissahickon erected a tabernacle in the forest, suited to their occult studies and researches. The structure was surmounted by a "Lantern or Observatory" (*Sternwarte*) in which a nightly watch was kept for celestial phenomena. This was the first regular observatory established in North America.

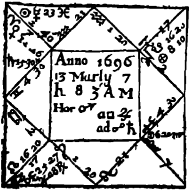
It is a noteworthy fact in connection with this community, that here in the wilds of the New World were practiced the various mysteries and rites of occult philosophy and esoteric theosophy.

Here the crucible of the alchemist frequently fumed until long after midnight, while the alembic of the Magister was distilling juices of herbs gathered at the dark of the moon in the hope of discovering the "Philosopher's Stone" or the "Elixir of Life," — in contrast, as it were, to the lonely watch maintained in the "Sternwarte" on the lookout for the harbinger of the Bridegroom, who was to appear in silky holiness.

Some of the horoscopes that were calculated and cast by these Hermetic philosophers, on the Wissahickon, are still treasured as precious heirlooms among some of the leading families of this State.

To return to our *Horologium*. It is known that after the death of Kelpius, in 1708, and the virtual disbanding of the Community, all of the philosophical instruments, as well as Zimmermann's astronomical apparatus, passed into the possession of Daniel Geissler and Dr Christopher Witt. The latter then went to Germantown, and continued in his profession as "Practitioner of Physick" until the end of his days.

It is further known from his correspondence that has come down to us, that Dr Witt was a close friend of both John Bartram and Benjamin Franklin, also that he was upon intimate terms with others of the original American Philosophical Society. All facts going to substantiate the old tradition as to the actual donor of this HOROLOGIUM ACHAZ HYDROGRAPHICUM, and that the interesting instrument is not only a relic of German mechanical ingenuity of three centuries ago, but also of the chapter of "True Rosicrucians" who settled in the Province of Pennsylvania two centuries ago, and were the first community of Hermetic philosophers who attempted to put their occult teachings to a practical test.



The Old German-Latin Horoscope

Salishan Texts.

(Read before the American Philosophical Society, March 1, 1895.)

By Franz Boas.

The following texts were collected in the winter of 1886-87 on the coast of British Columbia. As the languages which they represent are very little known, and as I do not see any prospect of adding in the near future to the material which I now possess, I consider it best to present the same as a slight contribution to our knowledge of the languages of the North Pacific Coast. Heretofore only brief vocabularies of these languages have been published. I have given grammatical notes on a few of them (Proceedings of the British Association for the Advancement of Science, 1891), but no texts which give the best insight into the structure of a language have been made known.

After some hesitation I have decided to make a few changes in the alphabet applied for recording these languages. Unfortunately the limited facilities of the printing offices deny us the use of diacritical marks, so that a systematic phonetic alphabet is out of the question. After several years of use I have found the alphabet which I applied heretofore not sufficient for the needs of the phonology of the languages of the North Pacific Coast. I have, therefore, adopted the following scheme:

a, e, i, o, u have their continental sounds.
E obscure e, as in flower.
â aw in law.
ö o in *voll* (German).
ʟ dorsal l, similar to tl.
q velar k.
k English k.
k anterior k, similar to ky.
χ velar, as ch in German *Bach*.
x as ch in German *ich*.
c English sh.
y, as in year.
! denotes increased stress of articulation.

BILXULA.

This language is spoken on Bentinck Arm and Deans Inlet, on the coast of British Columbia. It represents the farthest northwestern offshoot of the Salishan stock. The texts are fragmentary and indifferent versions of myths. Nos. 1 to 7 were told by a number of young women of the village of Sätsq, on Deans Inlet, the dialect of which differs slightly from that of Nuxa lk. The last tale was obtained from Nusk e lu sta, a young man from Nuxa lk.

1 The Snenē iq

Apsūʟaq tu ʟumstatx anei x nac eʟ koina ts tamnanau'tx
In the house a man and a woman and it cried their child

Pōʟskts ta Snene iq an'ai k sk o tk snikics tamnanau tx ʟ apskto o
It came the Snene iq he intended to shoot him their child He went

ta ʟumsta tx sx e tk snic ta Snene iqt Atemasqtô o ta
the man and he shot him the Snene iq He was dead the

Snene'iqt Nutso exêsktsal ta kôxlolᴇ mx tx K anx ulx i skts
Snenē iq He dug a hole the ground He did not return

ta ʟqulx t ta Snene iqt ta mnastx ʟaputskts ta ʟqulx t
the old the Snene iq his child He went the old

Snene'iqt ska koana ts Poʟaqto oqtx tôo qtx uʟ
Snenē iq and he cried He went down the river down river when

amatsutstx ska koana'ts Aianma'o tsk e'lotsik sle psotau
he sat down and he cried They went up the river they returned

wa spâaxo nau al ta Snene iq ta koana'tq Poʟa
they they were afraid (?) the Snene iq lo he cried

koa lotoqtx aqʟ wa s a lᴇmk au aianmâ'o tsakui'looq
They went down the river they went up the river up the river they went down

slepsutelx ao soq oâ o wa spâaxo nau Poi skts ta Iä'littx sk a
they returned they were afraid He came the Iä lit and

alᴇ mk s sk a anai x otsisk ta anusmᴇnu'tx koana'ts ta
he went up the river and together the the dead child they cried the

ʟumsta tx ska amto sis ta Snene iqt Tsal auts Ta Snene iqt
man and sitting with him the Snene iq They stopped The Snene iq

k limsk tâ'o uʟ ta Iä'littx Qima'its ti x a lo ti k a ai tomsx inō Axko
said to the Iä lit My dear I wish to cry with you Not

aʟnapali'ts ta mnaits Atᴇma'ma ta mnats ti x alo ti k a
I know (where) the my child Maybe he is dead the my child ? ?

aix ino ti k a naix x otsts Ti si ai al tsx ats ala au xoa wa ino ti k ama'ts
? ? here to you the

t aix ti ia'lia t aix i aptuts ti ʟā'lia t aix ui i'no tix t'al ti si
the copper this I give you the copper this to you this (to be a)

sialtô mx a ta mnais Aʟk ix ke'x oa wa sois ta mnais?
chief (for) the my child Do you see it the house of the my child?

Wix ai al ats wa soʟs ta mnaits 'A'xko k ix its' tsutkts
There it is the house of the my child No I (do not) see it replied

ta Iä littx Tsposts no skei k 'x ix wa sois ta mnaits'
the Iä lit I will rub over your eyes and you see it the house of the my child

"K'ix itatsᴇn wa soʟs ta mna i no' "Aiyal'x ui i no wa soʟs
I see it the house of the your child I give to you the house of

ta mnaʟs ske stalto'mx nots ska i ie'mno mo sanmak no
the my child and you will be a chief and you will make a house you four times

Aitalo ix its a'tsl ui ta Naust ax i apskts ta sta apsô'ʟs sk a kuna'mskts
I leave and go to the Naus He found it the his town and he carried it

o'ltsosqʟqtx ai tu sois ta Snâne'iqt i ôk a ti smnt tu
down the river out of the his house the Snene iq On top of the mountain the

soʟs ta Snene iqt
his house the Snene iq

Translation

A man and his wife were in their house Their child was crying Then a Snene iq came and wanted to shoot the child Then the man (whose name was Ia lit) shot the Snene'iq and killed him He dug a hole in the ground and buried him When the young Snene iq did not return his father went down the river and cried He sat down and cried The people who went up the river saw him They became afraid and returned home Then Iā lit went up the river and sat down with the Snene iq and bewailed with him his lost child When they stopped the Snene iq said to Iā lit My dear I desired to cry with you I do not know where my child is It may be it is dead I will give you my child s copper and you shall be a chief in his place Do you see my son s house There it is Ia lit replied I do not see it I will rub over your eyes then you will see my son s house Now I see your son s house I will give you my son s house and you will be a chief Four times you shall build a house Now I will leave this country and go to Naus Iā lit found Snene'iq s house and carried it down the river The house was on top of the mountain

2 WA WALIS

ALi skuiL ii x nas Wā walis ii tu s ɔi stx wa sx L mn l naq ta qc jtc
She was inside the wife of Wā walis in the house and her child the little one

λ Lia iamis ii x nas Wa walis x te ix ā iLs tl asx λ sxa'nskuiL
She wished to eat the wife of Wā walis the feet of the seal Her sweetheart

iL x nas Wā walis x ta sits sx λ sn ɩx (nax c q Wā walis ti
the wife of Wā walis one of his son His slave Wā walis the

imilimi lk tl wix koelo ɔk atx tl pā axis w) sti tk ak aias ɪ apsqto')
boy the one there sitting he steered and he shot He went

Wā walis k a numpɩ ix s sk a an ɔi k s ala k a asx k a slax
Wā walis and he went in his canoe and he desired the seals the many

Tk atisq Wa walis tsi qc qto tsi a ɩ sx ui Lapak lmisqtô o Wā wal s skya
He shot Wā walis a small a young seal He intended Wā walis and

isto xis ii a'sx uli sk s q ati x tsis Qoxi sqtôo x to sixumtx
he cut it the seal and he boiled it with stones He covered it with a mat

Ts'osxmqtô o Walisqtô o tu soo: slistx xo lisq ta Lā lastx
It grew dark He landed at the house he pushed into the water the canoe

sk a anai'x 'sqts sx a q oplix is iL x nas iL uL ta sxānstx
and he wished to he watched her the wife at her sweetheart

Nuk alik to ti sni stsk tus Wā walis o la asu'nk s ta apsoLtx
In the middle the night he arrived Wā walis at at the beach the town

Taiā mkitstôo Wā'walis sk aiastā'mkis ta me lastx uL ap^{s}o ɪ tx
He pointed it Wa walis he pointed the baton to the town

Tsito'mxlx sqtôo ta apsō Ltx Axtsqqo ta satl x s Wā walis
They slept the town He slept with her the man Wā walis

aL ta soLs ta mānstx L apsqto'otx Wā'walis uL tu qui e'ixs
at the house of the father He went Wā walis to the head part of

tu sxetstanau'tx Aiak sqtô o Wā walis ats Lk iinskoiL iL x nas
the her bed He scratched Wā walis he She said the wife of

Wā walis K ix ɔr ix ta tsk tsork s Wā'walis" Sx lik tsto'o
Wā walis I wish it would give the stomach of Wā walis He grew angry

Wā walis sk a tai ɛxoisq x ti tsitō ma ii x nasii Tsito'mix sqt
Wā walis and he threw (his baton) and she slept the woman They slept

ii x nas ii ɛn ti sxɛnstx Po'isqtô Wā walis sk a oɛtxs
the woman and her sweetheart He came Wā walis and he entered

ii tu sorstx sk a nik a psmis ta sati'x stx i apsqto'o
at the house and he cut off the head the man He left

Wā walis usqɛ sk a anux ul ɛxuis ta ti nags ta sati x istx
Wā walis outside and he took the head the head of the man

i apsqtô o Wā'walis o lɛ ɛ k li sk a nuf pis to q aitx
He left Wā walis to far and he put into it the basket

x wa ii ix lix wa a sx ui
b lle l n it of seal

Koɩnitsqto o ta mnais Wā walis Slaxs tu sixts ai tu sxɛtsta
It cried the child of Wā walis Much the blood in the bed

mna Wā'walis to plɛ'cqtuya ta sxans ui x nas Wā'walis
child of Wā walis the beheaded one the sweetheart of the wife of Wā walis

Qotslsqtô o ii x nas Wā walis ta mnai nautx sk a nut a xois
She cleaned it the wife of Wā walis the child and she washed it

ta mnɛ'nauix qois is tu sxɛtstanau'tx Tsito mɛlx sqtâo ta
the child she washed the bed It slept the

mnai nauɩ Wā walis Aq ɔɪ iaqtôo ii x nas Wā walis ta
child of Wā walis She wrapped him up the wife of Wā walis the

sxanstx sk a i aptus osqa ui tu sxɛtstastx ui tu asqat atx
sweetheart and she carried him out of at her bed at the outside

Qoqxɛ exuisqtô o
She covered him

P alx aktô o tu stanɛ'mts tu tsɛitstɛ tx Iaxoɛ'mqtau sk a
She rose the mother of the young man They shall awake him and

aɪps x tu susq ɔɛ mtsq 'Alatsixo'p ɛlk s ax qto osip?' Lapsktô o
eat the the younger brothers Why don't you uncover him? He went

ta Lqu lax ilix ltx sk a qiu'osis Nusq a axɛ maqtôo Ai
the almost grown up and he uncovered him He cried Now

tiplɛ exts ɛntx qamā tsais!' Koanatsqtô o tu tsantsto'tx Iɛtxumsqtô o
he has no head my dear! He cried the youth They assembled

ta sta apso'iautx "Wa stō plɛ ex ta sati'x Ls Wā walis' Tsai
the of the town No head the man of Wā walis

lɩuatsktô o sk a aLɩ'txums sta apso iautx Po'Lsqtôo Wā'walis sk a
Now all were assembled of the town He came Wā walis and

isu ta Nuqɛnki'laxsal'k anix Wā'walis! wa stu plɛ'ex ta
paddled Put into the water your paddles Wā walis! for without head the

sati x Lno sxɛms wa so nxuats ' Tsk tutsktô'o Wā'walis
your man when the sun rose the sun He arrived Wā walis

nuLqâme'exulsqtô'o ta q aitx sk a nuq La'nkis iL x nas iL
he carried it the basket and he brought her food his wife

'L akyani'x noō'mik tux atu'xtsi sk e'natix wa smatɛ mx nuts"
Go on! take out that and feed your people

Nuōmik tusqto'ii to q'aitx 'Tix ēt'ai'x ?" ' Ā'xkō, qɛnkye'tix
She took it out of the basket Is it that? No it is below

tais mix ' K isqtô o ta q omneq oLs ta sxa nistx ' Tsix sā'mats'al
what you like She saw the skull of the sweetheart Why

tsl nusq'ā'axom aL atustē'ix ?" E'p'isqtôo Wā'walis ta mnai'natx
do you cry at that?" He took Wā'walis his child.

Ēp'isktuts ta Lā'ilatx En ta s'aLoqoala'stx, nupalx aqtô'o
He took it the copper and the shamanistic implements, he went into the canoe

AuLē'mqtôo Wā'walis x ta sta apsō'Lstx ak a wuntsī'maxlō
They pursued him Wā'walis those of the town and they wanted to fight him

k a pākunix ī'm ALauaLemqtô'o Wā'walis nuix ayaqōtômkoalō'q
and they overtook him They pursued Wā'walis they were near him,

lasta'mkisqq ta s'aLoqoa'lastx ALEmanaqqô'o to aLau'Ltalutx.
he pointed at them his shamanistic implements They were dead these pursuers.

S'ix Ltsē'squts Wā'walis ala nutsix sē'exō ala sōlā't.
He paddled on the fjord Wā'walis on fjords to the sea

Tsāllx luamē'mqtôo Wā'walis
They did not reach him Wā'walis.

K 'x isqtô'o Wā'walis ta apsō'Ltx q'ōpEmsqtô'o wa smā'oL wa
He saw Wā'walis a town smoking the one the

sōL Nuk sā'axlsqtôo Wā'walis ta Lala'stx sk e ēxnusā'kias
town He landed Wā'walis the canoe and he went into all the houses

aL ta sōLō'k stx Axkō olō'k Ti k ik ix is ti k e L'u'msta
in the houses No one was there. He saw a man

Anoal'x sqts Wā'walis sk a talau's uL iL mEna's ta Lqulx ix
He wished Wā'walis and to marry his daughter of the old man

ta auk au'sLix Ē'polsq Wā'walis tu stō'tsēmstx Lqulx ix
the blind one He took Wā'walis the boiled dried salmon of the old one

Tsalx lloamisqtô'o ta Lqulx ix tu slumē'lstx tu stōtsE'mtx
He did not find it the old one the boiled salmon the dried salmon

Lk Emsqtô'o ta Lq'ulx ix uL iLmnas'iL "Qamal'ts, nuk x alēxē'mtx
He said the old man to his daughter "My dear, look back

qamal'ts uL ti alaxmi'tstski aL ta s nu'kyakilstx ā'tamiLts
my dear, to the playing with the boiled food

uL ti alaxE'mtstski al ta sta apsōLts tsu tama't'aix" tu
to the playing with those of the town ?" he

aLaLal'ōts "Tasnā'ō, aLai'ōtsLnō, qamal'ts!" Nuk x ālaxō'mq
always said so. "Stop! do not talk, my dear!' She looked back

aL qoalalx ā'ix'. "Taxtō'tsnō L'u'msta ta Lī'tx aL inō.'
to the old man "You speak the truth A man he is near you"

Alō'tsqtôo q'oalalx a'ix Wā'walis "Anoal'k'ts ak'a talau'sta uL
He said to the old one Wā'walis "I wish to and marry to

tsi mna'nō ts'aix" "Anoal'k tsā'mlluk k ix ailalx tō'mx'
the your daughter this" "I will who restores my eyesight

ti x to ti k'a al'tōms ti k a k ix ailal'x tōms ti k a tā'laus uL tsi
that one he ? he restores my eyesight he marries to the

mnats ts'ai'x" "Talaustsiō'oLisx anoal'kx ts aL ti
my daughter this." "I want to marry her I will at the

manuts t'aix. Ustā'm aLi'ik s ta sta apsō'Lnō Lqamal'ts?"
your daughter there Where are those of the your town my dear?"

"Lkoanā'ats wa palluā'tas ta sta apsō'Lts qaaxlā'nauaLō'q
"Once I cried (?) those of the town they went for water

ta sta apsō'Lts. K nix tō'mq ta as'akyal'ōtsEmtōLs t'aix'
those of the town He devoured them the all of them that

al ti qxla t nix qamai'ts Lokoa lats ino?' Sɪokoalano toox'
in the water this my dear Are you a shaman I am a shaman

ɛns I ak anax k x ailaix to mx ' K 'x ailaix to'minoto '
I G nt restore my eyesight I shall restore your eyesight

K 'x ailaix sqtô'o ta Lq ulx tx Sɛmql isqtô o ta qcqtc'tx
He restored his eyesight the l l u He wanted to have water the little one

L apsqto o ta snax ɛnaxc'tx sk a qâ ixlas K nix c'mqtôo x ta
He went the slave and fetched water He loved him the

Sk amsk tx I apsqtô o Wa walis sk a iastâ'mkis ta s aɪ okoa lastx
Sk amsk He went Wa walis and he pointed the shaman's implements

Atɛmasqtô o ta Sk amsk tx Nusq ltsqto o Wâ walis ɪaLani'x!
He lied the Sk amsk He cut him open Wa walis Come!

qamai'ts k 'x tix wa smatɛmx nutsx Anoai'k ts sk a nitsmau
my dear the your people I wish and make alive

wa smatɛ'mx nutsx 'Ā'xko aɪ k pau sk a smatɛ mx ts Axtxoaiô tsno
the your people No they all and my people He sent

k a tɛmsna axɪ nomats k a tɪ msiaioɪ maɪ no'mats '
and they will be your slaves and they will be your servants

L apak imtlsqtô o Wa walis k a nuta'xtis Wulxla akq o ti
He healed them Wa walis and he washed them He tried the

nôm i o Patslt akimi'tsklut Wâ'walis ta sna axstx nut â xols
one First he healed him Wa walis the slave he washed him

Nut ixtisqtô o to aik em to aLatɛma'tx sk a snaaxa'qts
Then he washed them those long ago the dead ones and they became slaves

aɪ iɪ x nas Wa walis Tsaiak lmsqtô o sk a mosinmak sqts
of the wife of Wa walis He finished and four times

Wâ walis sk a tskis wa mo sui wa soL wa Lix Liko'ooL wa
Wa walis and he made the four the houses the large the

so Lok s sk a staltô mx sis Wa walis sk a Lqo ina'tsts Wa walis
houses and he was a chief Wa walis and he became great Wa walis

sk a staltô'mx s
and chief

I apsqtô o iɪ x nas Wa walis sk a nux u p is tu ts i maL aL
She went his wife Wa walis and she washed the intestines of

tu asx tx Sts isqluq wa sk nix is iɪ x nas Wâ'walis
the seal She likes only one kind of food the wife Wa walis

Pôʟ iktôo tu siu tix sk a isutau' nmpcmqtô'o iL
It came the killer whale and paddled he took her into his canoe the

x nas Wâ walis ' Wa walis ! nmpe m iɪ x nasɪ no x tu
wife of Wa walis Wa walis! he took her into his canoe the your wife the

siu'tax ' Oqxisqto'o Wa'walis ta snax ɛ'nx lstx ' ɪ aLi'x
killer whale He said Wa walis to his slave Come!

auɪ tiɪ t a x k mâ'nx its iɪ ta x nasis " Iso'isqtôo Wa'walis sk a
we will follow her recover the my wife He paddled Wa walis and

aɪ auɪ tis to siu'tix Aiaumo otskuc'lots ik Wa'walis
he followed it the killer whale He stopped Wa walis

AL cpiskoê'lots ik Wa walis ta q ɛ'lx sutx , s'aɪ lpôLoosisqts ta
He took it Wa walis the rope he let him down the

snex lutxc stx L apsqtô'o Wâ'walis sk a mo lɛms sk a
slave He went Wa walis and he jumped into the water and

aLa'uris iL x nasiL Qenqrtxc k oc lk xemsqto o wa so nx uats
he followed the wife Almost left by it got dry the sun

Tsk taqtô'o Wā'walis ur ta koxlo lemx tx K lx lsqto o Wā'walis
He arrived Wā walis at the country He saw Wā walis

ta qmo orank tx tl k ts tsuis ta isumkumLe'tx ta ru
the stout one the on wh h l l the who gather l fed the

qu lx ðtx Osek a'msqtôo Wa walis ur ta stntx Qat oro osakisqq
old one He entered W v l s in tl tr H l r ko it

Wā walis to tsiðxtx Ko ina tsjq ta x q ulx tx ananā l
Wā walis the wedge He cri l the ol l o io anan l

K exr c ts ams ta r qmo or anx ala tsi ðxtsau a Q ulaix a lx
He grew angry the stout t his wedge the r Ol l no l

tsaio tsx sk ā koana tno Anoai k n a sk a aik ck mi ts atu'xtsl
stop and cry D y x v sh l l I l ql ur that one

sk a k stuts Axon'ko ar x ne nom orn o ur tsl k x nas tsl k a
and I do it Not do you know al at l er the w man her

a nopmit k a a sut qamai ts? l ix ma tsi ar kuni t
he carried her into his canoe and he p l lled l iy l r H at or c her he carried her int

ta i sor tsix mā to tsis nux cm xtsx ala sors ti stalto mx tx
the house that one sl e sits near the fire in the h s t tl c l l

Ti x lo otx ti iskumLalo'sits k a q x xlatsmastu ts k a exsura'nix its
? the I carry fu l and I c rry wat r a d I t k fire at

wa sors ti staltô mx tx k a ariisms ar ti nuLqla tx sk a
the house of the chief and stay at the post and

ar'ir s mts Wix i tsik ats sk a wula xaits wa qxla'ts
stand upright She is there and l p r it the water

Wix i'tsik ats sk a r apno sk a c pix tsi x nasnutsx Laps qtôo
She is there and you go and take her your wife He went

Wa'walis sk a e pis iL x nas ir r ik c it ri'mn o ĉ nsts En ta
Wā walis and take the woman c me l n o I am the

Wa'walis" LEmsqtô o ir x nas ir T atsqoā r Emsqtoo qmo or a nk tx
Wā walis She ar s th woman H lay down the stout one

aL to anuka laLis tu sor tx Lapsqt o Wa walis sk a aLcpis iL
on the threshold of the house He went Wā walis and he arrie l h r

x nas ir sk a lc'psutau uL to koxlolâ nx au tx Putsar kuē lots ik
his wife and they returned to the their country First

Wā'walis onk snomuts ar ta q Elx tx Q atsatisqtô o Wā'walis ta
Wā walis climbed up at the rope He shook it Wā walis the

q Elsx utx PoLsqtôo ir x nas ir ur ta ra'las Wā'walis ln
rope She came the woman into the canoe Wā walis He

tsapLktuya ta snax r'naxis Wa walis r apak misqto'o Wā walis
only bones the slave of Wā walis He wanted to heal him Wā walis

sk a niisE mtus ta snax enaxl'stx r apsqtô'o Wa'walis sk a
and he made him alive the slave He went Wā walis and

lso ts uL ta kôxlolE'mx autx Lotx umsqtô o ta sta apso'is
he paddled to the their country They assembled those of the town

smaqumaqo'ts snuk lu ts smaqtô o ti s amL sk a Lqoana ats
one winter one the summer and he became great

Wā'walis sk a stā ltômx s ala ta kôxlo lEmx s iL x nas iL
Wā walis and a chief at the her country the woman

Translation

The wife of Wā'walis and her child were staying in the house. She desired to have seal flippers to eat. One of Wā'walis' men was her lover. Wā'walis went hunting and his young slave steered his canoe. He went to shoot many seals. He shot a young seal, which he cut up and boiled and covered with a mat. When it was dark he landed near his house. He pushed his canoe into the water. He wanted to watch his wife and her lover. At midnight he arrived at the beach in front of the town. He pointed his baton towards the town. Then the people fell asleep. Wā'walis' man slept with her in the house of her father. Wā'walis went to the head part of her bed and scratched at the wall. His wife said, "I wish (that mouse) would gnaw Wā'walis' stomach." Wā'walis grew angry. He stretched out his baton and the woman fell asleep. She slept with her lover. Then Wā'walis came and entered the house. He cut off the head of the man. Then he went out of the house and took the head of the man along. He went far away and put the head into a basket. He covered it with seal meat.

Wā'walis' child cried. The bed of the child was full of the blood of the beheaded lover of Wā'walis' wife. She washed the child and the bed and the child went to sleep again. Then she wrapped up her lover and carried him out of her bed and out of the house. She covered him.

(On the next morning) the mother of the young man arose (and told) his younger brothers to wake him. (They called him, but he did not stir.) "Why don't you uncover him?" The oldest one went and uncovered him. He cried, "O my dear, he has no head." The youth cried and the people assembled. "Oh, Wā'walis' man has no head!" Now all the people of the town had assembled. Then Wā'walis came paddling. (They cried,) "Put your paddles down, Wā'walis! One of your men was (found) without head when the sun rose this morning." Wā'walis arrived carrying the basket in which he brought food for his wife. "Come! take the basket and feed our people" (he said). She took the basket. "Is it this (what you want to give me?" she asked). "No, what you like to have is below." Then she saw the head of her lover. "Why do you cry on seeing this?" Wā'walis took his child. He took his copper and his baton and went into his canoe. The people of the town pursued him. They wanted to kill him. They came nearer. When they were near him he pointed his baton at them and his pursuers were dead. He paddled on the fjord towards the sea. They did not reach Wā'walis.

(Soon) Wā'walis discovered a town. Smoke was rising from one of the houses only. Nobody was to be seen. He saw a man. Wā'walis wished to marry the daughter of this old, blind man. He took the boiled dried salmon of the old man. The latter could not find his salmon and said to his daughter, "Look back, my dear, somebody must be in the town and is playing with my food." He always said so, and she replied: "Stop! do not talk, my dear!" But then she looked back towards the old man (She saw the stranger and said) You spoke the truth a man is near you Wā'walis said to the old man I wish to marry your daughter I will give her to him who restores my eyesight

I want to marry her (replied Wā'walis) Where are all the people of your town my dear? When they went to fetch water that being in the water devoured them my dear Are you a shaman? Yes I am a shaman Then restore my eyesight I shall restore your eyesight He did so Then Wā'walis child wished to have water He sent his slave after water Then (the monster) Skyamsky devoured him Wā'walis went out pointed his baton at it and Skyamsky died He opened its belly (and said) Come my dear and look at your people I wish to resuscitate them (The old man said) They are not my people Don't say anything they will be your slaves They will be your servants Wā'walis washed them and healed them One of them limped (because one of his bones was lost) Wā'walis first washed his slave and healed him Then he washed those who had been dead long ago They became slaves of Wā'walis wife After he had finished Wā'walis built four times large houses and he became a great chief

Once upon a time Wā'walis wife went to wash the intestines of a seal She liked only one kind of food Then the killer whale came paddling and took her in his canoe Wā'walis the killer whale took your wife in his canoe Then Wā'walis said to his slave Come we will follow him and recover my wife Wā'walis went in his canoe and pursued the killer whale He stopped Then he took a rope and the slave let him down Wā'walis jumped into the water and followed his wife When he almost reached the bottom of the sea it grew light and the sun was shining Wā'walis arrived in a country and saw a stout old man who chopped a tree for fuel Wā'walis hid in the tree and broke off the point of the (slave's) wedge The old man cried ananah He became angry on account of his wedge (Wā'walis said) Old man stop crying If you so desire, I will repair your wedge Don't you know about a woman whom a man carried away in his canoe my dear? He carried her into the house where she is sitting near the fire in the house of the chief I am going to carry fuel and water into the house I shall make a fire You stay behind the post of the house and wait She will be right there Then I shall pour the water into the fire At that time you must go and take your wife Wā'walis went and took the woman Come rise I am Wā'walis She arose (and they went out) The stout man lay down on the threshold of the house (and made himself so big that the killer whale could not leave the house) Wā'walis took his wife along and they returned to their country Wā'walis was the first to climb up the rope He shook it and then the woman climbed into the canoe Only the bones of the slave (whom Wā'walis had left in the canoe) remained Wā'walis healed him and revived him Then Wā'walis paddled to their country They had been away one winter and one summer The people assembled and he became a great chief in the country of his wife

3 THE CREATION OF THE SALMON

Tsalx liwa'naktô'o stam sEmLx akoâ'la Yula'timot, Masmasalâ'nix
They could not find it the salmon right Yula'timot Masmasalâ'nix

stâm sEmIk au'aI Xêltotx qoax, sk'Ix â'alasnos sk ê tl
the real salmon He went to fetch it the Raven he went to find it and the

x mâ'noas Oqxtix stô'o qoa'x skukuLx nastx TsuastE lqs,
its soul They accompanied him the Raven his younger sisters Tsuaste lqs

Stsuak tE'laqs, X ilx, Ask ani'qs Lapaqtâ'oqs sk ê Isu'tau,
Stsuak tE laqs X ilx Ask ani'qs They went and paddled

tsk taqtô'o uL ta sots ta sEmLk tx Iputlstô o tl qoa'xtx
they arrived at the house of the Salmon He hid them the Raven

skukuLx na'stx al ta stup'â'nxt TsôsEmqtô'o L'apaktô'o
his younger sisters at the point of land It grew dark They went

sk ê nuk 'Ixâ'aqlt tu Lalast'axt tu sEmLk Laptntstâ uLk· tl
and gnawed through the canoes of the Salmon He went the

qoa'xtx sk ê aLpstâ'omkus Â'laxits tl x mt'nuostx tl
Raven and they fed him He wanted to steal the child of the

sEmLk Axtsemkstô'o tl qoa'xtx Xemsktô'o, wa sp'alk ts
Salmon He lay down the Raven It got day that he rose

Xems aLpstômktuts al tl ê'nôxtx Tsaiutsktô'o sk a
It got day they fed him again in the morning It was finished and

nupaix s, sulix tsemktô'o x to staltô mx tx
he loaded his canoe he gave them travelling provisions the chief

Aiutsktô o qoa x "Tsix tx tsi mnanu'tsx tsl k auaLts
He said to them the Raven Her the your daughter the let her load it

uL tl Lala'stx" Lapaktô'o qoa'x sk ê nupai'ts
in the canoe He went the Raven and he went into the canoe

Lapsktô'o iL mEna's tl staltô'mx sk ê k au'aIs
She went the daughter of the chief and loaded his canoe

qoa'x x iL mE'nas tl staltô'mx tx Limasktô'o
the Raven's the daughter of the chief He took her away

qoa'x x iL mE'nas tl staltô'mx tx Lapsktô'ox qoax
the Raven the child of the chief He went the Raven

sk a Isû'Its tsk taxtô'o uL skukuLx na stx Potskualo'ts ta
and he paddled they arrived at his younger sisters He came the

mâ'ns iL tsâ'atstci sk a â'uLêm qoa'x Nutsku'lx skq tu
father of the girl and pursued the Raven It foundered the

Lala'stx Anuk Ixua'aqLau TsuastE'lqs PoLs tl qoa'x sk a
canoe They had gnawed it through Tsuaste lqs He came the Raven and

IsôLs uL Nuxa'lk, xtsâ'mkix ts qoa'x iL mE'nas
paddled to Nuxalk, he threw her into the water the Raven the child of

ta sEmLk blaxkts ta sEmIk aI tu tEmix
the Salmon Many the salmon in the river

Translation.

Yula'timôt and Masmasalâ'nix could not find the real salmon Then the Raven went to fetch the soul of the salmon His younger sisters TsuastE'lqs, Stsuak tE'laqs, X ilx, and Aska niqs accompanied him. They went paddling in their canoe and reached the house of the Salmon. The Raven hid his younger sisters behind a point of land. When it was dark they went and gnawed holes through the bottoms of the canoes of the Salmon. The Raven went and (the Salmon) fed him. He wanted to steal the daughter of the Salmon. The Raven lay down. When it got day he arose. Then they fed him again. When they had finished he loaded his canoe. The chief gave him traveling provisions. The Raven spoke: "Let your daughter put them into my canoe." The Raven went into his canoe. The chief's daughter brought the load into the canoe. Then he took her (into the canoe) and paddled away. They arrived at (the place where he had left) his younger sisters. The girl's father came and pursued the Raven, but his canoe foundered. The Raven's sisters had gnawed it through. The Raven came to Nuxalk. Then he threw the Salmon's daughter into the water (and since that time) there are many salmon in the river.

4. The Deer and the Raven.

Alaik'ē atEmas ti mna'is tl sx pani'Ltx. Wa skoana'tsqts wa
Long ago it was dead the child of the Deer. He cried he

s al mis ti sx pani'Ltx s ānusmE nas. Anusuai ax tai ta
always the Deer for his dead child. It is dead (?) the

mnāI sai' ananai'k s ta mnaI sai'. ALnix ne'q ots ānima so wa
my child I cry anana for the my child. ?

slai's ta mnaI sai' ananaik'ē ta mnaI sai'.
? the my child I cry anana for my child.

PoLsktō'o ti qoa'xtx sk'a anai x otsis sk'a koana ts.
He came the Raven and sat down with him and cried.

"Anoai'k ts sk'a ai nai x otstsino aL ti mnaI no sk'a koanatII
I wish to and together with you at the your child and to cry

qamai ts. Anusmena'nomak s ala lau'atuxtsL koanatsmasa auxtsl
my dear. Your dead child ? cry

aL ti anusmE'na x ti mi nas qamai ts." Ti qoa'xtx sk'a
about the dead child the his child my dear. The Raven and

qē exlix ls. Laix i'alx k alk ai ti squ x ts ai. koana tsqts ti qoa xtx
began. His legs are thin the legs. he cried the Raven

sk'a nuya'mts. Nuya'mtsqts ti sx pani'Ltx. Wix wix lx a i ti
and he sang. He sang the Deer. His legs are lean the

squx ts'ai. Anoaik ts ti qoa xtx sk'a k x nix i s ta sx paniLtx
legs. He wished the Raven and for food the Deer

sk'a nuLuqo'axlsqts ta sx paniLtx ta stsqā ats. Iapak imlsqtō'o
and he ate his inside the Deer's his anus. He opened him

sk'a i'stox ls. I'apaqtō'o tu susqoe mtsx sk'a aLxapate'm
and skinned him. They came the his sisters and carried it home

ta sx pani'Ltx. La'pak memqtō'o. sk'a slome'm ta sx paniL sk'a
the Deer. They cut it and boiled it the Deer and

k x nix o'mts ta sx paniL.
it was their food the Deer.

Translation.

A long time ago the child of the Deer died. He always wailed for his dead child. "Oh, my child is dead. I wail for my child." The Raven came sat down by his side and cried 'Let us wail together for your child my dear Then the Raven began to sing his wailing song and said 'Your legs are thin The Deer sang Your legs are lean" The Raven wished to have the Deer for food (He said Don't scold me, and pushed him so that the Deer fell down the precipice near which he was sitting) He began to eat him at his anus He opened him and skinned him Then his sisters came and carried the deer home They cut it boiled it and it served as their food

5 The Origin of the Mink

Sx umk ts wa sonx ats alai'k Sx u nā lustusq T otqoa ya
It burnt the sun once He burnt everything T otqoa'ya

alai k F noxm iqs qum utô o sk a nuxyeks wa slax wa
once In the morning he rose and went to get fuel the much the

ne ix Nuk ali k tl sonxtx sx um lus wa so nx ats sk a atama nauts
fuel At noon the sun burnt all the sun and they died

wa slax wa L umsta tx Slaxs ta xts mk tsut ta Lumsta ix
the many the men Many swam the men

Sk x nal istokts tl Snx t aix ta mn istx sk a taia'mkits oaxe'nk
He broke his bones the Snx he the his son and threw him down

sk a t o kyas ala q8 ik ats
and minks at below (were)

Translation

A long time ago the sun burnt everything T otqoa'ya (mythical name of mink) burnt everything He arose in the morning and went to get fuel At noon the sun burnt everything and many people died Many people (jumped into the water and) swam Then Snx broke the bones of his son he threw him down (from the sky) and he became a mink

Note —This refers to the tradition of Mink or T otqoa'ya who was the son of the sun god (Snx) and of a woman He was maltreated by men and visited his father in the sky ascending to heaven in one version on the rays of the sun, Snx s eyelashes In another version along a chain of arrows which he had made He carried the sun in his father's place but disobeyed the instructions of the latter, approaching too near the earth Then the woods began to burn the rocks to crack and the water to boil Snx caught his son flung him down and transformed him into the mink

6 The Creation of the Sun

X LMB'nas ti Snx t alx wa namō's wa x na suks
The daughter of the Snx that one the four the girls

I apsktô o qoa'x sk a qoa'ls UL ta qlatx I ap anaik sqtô'o
He went the Raven (as) spike of fir to the water Fetch she wished to

li qoalx'm IL mF'nas tl Snx t alx sk a qā'axlas ui ta
the eldest one the daughter of the Snx that one and drank at the

ql itx Qaaxlamā'nix isqtô'o ta qoa'lstx Atsiwilktā'mk imts qoa'x
water She drank the spike She became pregnant with the Raven

sk a	qoa'la	Mosqna'mk imts	qoa'x	sk a	noosqonā'mk imts
(as)	the spike	After four days	the Raven	and	she gave birth to

qoa'x	Sk a	anoaı'k sqts	ta	qoa'x	ta	qe'qte	aı	ta
the Raven	And	he wished	the	Raven	the	little one	for	the

paqeyā'latx	ta	nusxe'mtatx	[Aı	to	aı'k tx	s ênı	Tl	sonx
box	the having the daylight	In	the	past	it was dark	The	sun	

wats	ik a'x	koaloxe mtı nıı	axk aai's	qoa'x	Skuı uma atlı'oas
it was	not	it grew daylight when	he went up	the Raven	He wanted to have everything

qoa'x	aı	to	aik tx]	Sanuık sqts	qoa'x	sk a	ye ıx mis
the Raven	in	the	past]	He wished	the Raven	and	to play with

ta	qe qto	aı	to	paqeye'la	ıs	ta	ma nstx	S'e ıoks	ta	Snx
the	small	with	the	box	of	the	father	He said	the	Snx

t'aix	uı	ta	mnastx	"Sk a maı	anoaık ats	sk a	ye'ıxmis."	Sk a
that one	to	his	child	And	he wishes to	and	to play	And

yal'aıkunis	to	paqeyē'latx	Oaxē nk	Tsaıautsqlō'o	qoa'x
he played with	the	box	He went down	He stopped	the Raven

sk a	koana'ts,	s yaıaxmists	to	paqeyē'latx
and	crying	he played with	the	box

Translation

Snx had four daughters The Raven went (He transformed himself into a) spike, which dropped into the water, (from which) the eldest daughter of Snx used to fetch water She drank the water and swallowed the spike She became pregnant and after four days she gave birth to the young Raven The little Raven wished for the box in which they kept the daylight [It was dark in the past There was no sun and it grew daylight when the Raven went up He wanted to have everything in the past] He wished to play with the little box of the father Then Snx said to his child "He wishes to play with the box" (She gave it to him) and he played with the box Then the Raven stopped crying and played with the box (He finally took it out of the house and broke the box Thus the sun was liberated)

7 The Boy and the Salmon

Asqusnote'mq	x ta	manstx	Sx ılık tsktō'o	ıL	sta'ntl
He always brought him food	the	his father	She grew angry	the	his step

mots	ıı	ı aptuskoaluqtō'o	sk a	t'natis	ıı x nas	ıı
mother	the	He gave her to eat	and	presents of food	the woman	the

Nutaıamk ıx êmtō'o	tu	s'e'natlskoaalo'tx	sk a	aıaı to'm	uı	ta
She threw them down	the	presents of food	and	she spoke	to	the

mnastx	Lapskuts	ta	tsaatste'tx	sk a	sx lıx lık tums	sk a	ıxq'ē'ms
his child	He left	the	youth	and	he grew angry	and	went

sk a	k'ıx omats	sk a	ıxq'ı'ms	ıapak stōo	sk a	tk aıx nasqıx
and	he did not know	and	he went	He left	and	he shot it

tu	tsıtsipē'tx	Tk snā'nıx lsqtō'o	ta	smLk tx	L'aputsqtō'o	ta
the	bird	He hit it	the	salmon	?	the

smLk tx	sk a	nunusqoaxE'maq	ta	smLk	Tsk tsqtō'o	ta
salmon	and	it cried	the	salmon	He arrived	the

tsāastē'tx uʟ ta smɪk tx ʟk ɪmsqtô'o ta smɪk tx "Tqtsā'
youth at the salmon He said the salmon "Throw

mk tsx l'" ʟ aptusktô'o ti tsaitsē'tx sk a qtsa'mk ɪx s
me into the water He took it the youth and he threw him into the water

ta smʟk tx Stsux ɪmsqtô o ta smɪk tx sk a mɪʟɪ'pts ʟk ɪmsqtô'o
the Salmon He jumped the Salmon and once He said

ta smɪk tx x k ɪx ā'lasnix ɪs tu tsātsē'tx tu tsāpts ta
the Salmon he should look for the youth the bone of the

smʟk tx Āxkots ok lk ɪs tsāatsēe tx ta nutqɪ'l axitas ta smɪk tx
Salmon Not he saw it the youth the bone of the nape of the Salmon

x wa ɪ aps k lx ɪsqt ɪ o ɪ aptutsqtu'ts sk a qtsā'mkis
that he found it he saw it He gave it to him and he threw him into the water

Iɪ'sqts Nuk tsī ɪxtsotskts ta smɪk tx sk a ɪ ala'sqts
He was good He came ashore the Salmon and his canoe

Nupɪmo tskts o ɪxē'mq tɪ smɪk ɪ ipɪ'kts ʟk ɪmsqtô o ta
He went into his canoe down (?) the Salmon he left He said the

smʟk tx sk a axsᴇ ms tu tsāatstē'tx "Axtx qɪoxô'mno'
Salmon and he should pull his blanket over his head the youth "Not uncover your head'

tsutkō ɪts'ēk ta smɪk tx ' Wix to'tan sk a tsk 'x tiʟ sk a ɪaxtsl'nō
spoke the Salmon Those and we see them and I awake you

uʟ ti apso ɪ tl tk 'x ɪɪ iko ots t aix " Tsk taqtô'o uɪ ta apso ʟtx
at the town the we see it that one They arrived at the town

Iaxoo'mqtô o ta sOʟs ta t'ēx ɪ ɪla tx ʟɪpɪqtu'ts, tsk taqtu'ts
He waked him (at) the house of the (a bird) They went they arrived

uʟ ta apso ɪ tx tsutsulɪ ttsx S nuyamlsq s amlt wa s'nuya'mtau
at the town of (a bird) They sang always they sang

tsī tsutsulo'ttsx ɪ k 'ɪmsqtô'o ta smɪk tx "K a maʟyanix ɪx
the (birds) He said the Salmon "When you like it

tl k a smā'o als kôxlo lɪmx ats sk a al otsno uʟ ēns " Sk a
the one at country it and speak to me " And

las tɪ k a smā'o Uā litktuts ta sOɪs ɪɪ tsutsule t
good was the one They went on to the house of the (bird)

iʟ ɪ apaktu ts sk a ɪsutau', tsk tatu'ts uʟ ta sōʟs iʟ
the They left and paddled, they arrived at the house of the

qulᴇxlelē'ts iʟ sk a lana'xtsq tu tɪ x na'sltx Uali'tktuts
(bird) the and she was pretty the woman They went on

ʟ'apa'ktuts sk a uali'tk Tsk taktu'ts uʟ ta apso'ʟtx ta sōʟs
They left and went on They arrived at the town the house of

iʟ qoaqoā'os iʟ Ōmaktô'o ta apso'ɪ tx sk a aʟaxoai'x stom
the (bird) the They went ashore at the town and he went into the houses

ta tsaatstē'tx. Alotsqtô'o ta tsaatst'e'tx 'Sī'as ix ʟo mā'o iʟ,"
the youth He said the youth 'She is pretty the one she,"

alōtsqtô'o sk a talau'sau ɪ k ᴇmsqtô'o ta smʟk tx sk a
he said and they married He said the Salmon and

sx uʟaɪnisa'lō, alo'tsq ta smʟk tx "S'ax tɪ k a ne'nlts tl k a
forbade it he said the Salmon "Not he survives he

talau'salo uʟ iʟ qoaqoā'os iʟ " ʟapsqtô'o ta tsāatstē'tx uʟ iʟ
marries at the (bird) the ' He left the youth to her

sk a axtsʀ'ms Xomsqtô o, amtsqtô'o, s axtsk atsmaɪ Lapaktu'ts
and lay down It got day he arose not he was dead They left

uL ta soLs ta sqɪptstx Alotsaqtô o tu sqɪptstx "Stɪ
for the house of the spirits He said the spirits A

kya'ns tɪ mnas ta smatEmx au'tx omaktô'o sk a aɪ claxtô'm
strangers the child of the their people landed and ?

Sꜰmtsɪx koe'lotsɪq ɪL sãmL ɪɪ Tso ōmatataɪsu tuts k'utsɪx a'tx
They reached the simL her They landed

alō'tsmɪs ta tsãɪstc'tx "Wa sɪas ta kôxlo lêmx ɪmats ta
he said the youth Go! Is the country where the

taɪ'a ta x ɪx na'sctx" E'lositqtuts uL ta soɪs ta t lɪtx
pretty the girls They arrived at the house of the T'll

Laputsaqtô'o tu t lɪtx sk a ɪɪ qoltimotau' Alotsqtô'o tu tsaatstc'tx,
They left the T'll and she laughed He said the youth

Lk lmsqtô'o ta smɪ k tx "Wa sɪa'nau wa apsō ɪ ɪu sk a
he spoke the Salmon They are glad (in) their town and

sq'oa'ɪ nanau s'ɪLɪɪ q oltimotau'" Ualɪtktu'ts Smtɪx koe'lots'iq
they are merry they laughed They went on They reached

ta soɪs ɪL k apaɪ' ɪɪ Sk a sxsqts sk a sps'o'ɪ ɪɪ k 'apaɪ'
the house of the k apaɪ' her And ? was the town of the k apaɪ'

ɪɪ Ualɪtktu'ts uL ta sōɪs ta uaɪ stx o'maqtuts Sk a
her They went on to the house of the silver salmon they landed And

aL loxoau' K ɪx ɪɪqtô'o qnusomqtô o tsãatstc tx x ta smɪ k tx
they looked much He saw he sighted the youth and the Salmon

uL amatau' ɪu tɪ x nasc tx snut'axma'qx Amtcɪsqtô'o taam
at where they the women bathed He was sitting there

Lumstanē'tx al ta kôxlasxo'ts ta uuqla'tx Lutso'oLɪsqtô'o
a man at the bank of the water They exchanged their clothes

ta Lumsta'tx tɪ x q'oc'lok atx' "Slutso'oɪ ɪ'nɪx ɪɪ" Stwɪ'nmau
the men the ? We will exchange clothes They came

tu x ɪx nase'tx sk a nut axmau' ɪapaktô'o sk a qxtsamx tsutau
the girls and bathed They went and went into the water

ɪapaktô'o tu tsaatstc'tx sx 'anuta xtɪs Xucncmuktaktô o ta
He came the youth he washed them They recognized him the

tsãatstē tx ɪaputsaqtô o sk a nusqɪ'axma sk a pa'axônau
youth They left and cried and were afraid

Lã'psutaqtô'o uL ta soɪs ɪɪ sɪmL ɪɪ Talau'skuts tsaastē'tx
They returned to the house of the simL her He married her the youth

uL ɪL sãmL ɪL, sk a smo'a axnc'motskts x tl s ânɪ Luas
to the samL her and one he thought the night two

lãnx qma'lko X ɪ mꜰna'lx s ta tsãɪstc tx x a nuLnô s Lapɪ'k qts
seasons He got children the youth the two They made it ready

ta smɪLk tx sk a tu to Lɪ'las sk a Lapau'ts sk a ta kye'nau
the Salmon and the canoe and they left and they visited

uL ta sōLs ta mãns ta tsãatstc tx Tsk taqtô'o wa
at the house of the father of the youth They arrived at

stutlx qtuya ta mãns ta staatc'tx tɪ aLqp aɪ ta sɪLmã'k tx
that one the father of the youth the being above at the salmon weir

tl koakonã'tē K sɪsqtô'o ta tsãatsc'tx ta q'ɛltsx tx.
the crying much He lifted the net the youth the rope of bark

Xuônĉmutsqto'o tɩ mansɩx wa stulɩx ktuyɩ ta mnasɩx Tɩ
He recognized him the father of that one the son He

k'x is a tɩ sɩlmak txs Nitx umsqtô o ta sta apso r s ta
saw him at the salmon weir They came to his house those of the town the

x q'ulx tx Alotsqt o tɩ tsuɩtsɩ tx nusqtsollmx a'latx Otɩxsqtô o
old one He said the youth they should clean the house He entered

tɩ tsuɩtsɩ'x ut tɩ sɩɩs ta mansɩx Lɩts ɩ x sqts tsuatsɩ tx
the youth at the house of his father He related the youth

wa sɩsais tu iqtx mnoɩ'k mɩ tu smɩk tx Aɩo'tsau tu
to all of them the cedar bark they desire the salmon They say the

smɩk tx sk a aɩpstutɩ'm x ta iqtx ' K stutɩ'mqx
salmon and they eat it the cedar bark They bit each other

swintsɩ m x tɩ mnmatsantô o tu r u mstatx sx ĉk tnɩ mktuts
they fought the children of the man they struck each other

ɪ apskuts Iɪ mnsɩ ɩɪ sk a sx ɩx lɩx tE ms ' sk a u allx s
they went The our children and are angry and she deserted

ta qtɪmtsɩx
the her husband

Translation

The father (of a youth) brought him always food. Then his stepmother grew angry. When (the father) gave her to eat she threw the food which he had presented to her down. She scolded his son. Then the youth grew angry and left. He (went into the woods) without knowing where he went. He went on and he tried to shoot a bird. His (arrow) hit a Salmon. He heard the Salmon cry. When the youth came to the Salmon the latter said, "Throw me into the water." The youth took him and threw him into the water. The Salmon jumped (but did not swim right). Then the Salmon told the youth to look for one of his bones (which was missing). At first the youth did not find the bone of the nape* of the Salmon, but then he found it. He gave it to him and threw him (again) into the water. Now he was perfect. Then the Salmon came ashore in his canoe. He went down to the canoe. The Salmon told the youth to lie down and to pull his blanket over his head. "Don't uncover your head," said the Salmon. "I shall awake you when we come to a town." They went and arrived at the town of the birds t'Sx Lala tx. They went on and arrived at the town of the birds tsutsule'tsx. They were singing all the time. The Salmon said, "When you like a country you must tell me." Now he liked this one. They landed and went to the house of the bird. Then they went on and paddled. They arrived at the house of the bird qulExlele'ts, and she was a pretty woman. They left and went on. They arrived at a town (where there was) the house of the bird qoaqoā'os. They went ashore and the youth went into her house. He said, "She is pretty," and he married her. The Salmon forbade it and said, "Nobody survives who marries the bird qoaqoā'os." The youth however went to her and lay down It got day and he arose He was not dead They departed for the house of the sqapts The latter said "A stranger landed Then they went on and came to the fish samL They landed and the youth said This is a good country Here are pretty girls ' They avoided the house of the fish t h They left her and she laughed Then the youth and the Salmon said They are glad and make merry in this town They are laughing They went on and reached the house of the k apai' salmon Her town was bad They went on to the house of the silver salmon and landed They looked about and the youth and the salmon saw the place where the women went bathing A man was sitting at the bank of the pond The youth exchanged cloths with him Then the girls came and bathed They went into the water and the youth washed them but they recognized him They ran away and cried They were afraid Then they returned to the house of the fish samL The youth married her He thought he had stayed away one night but it was two seasons The youth had two children Now the salmon made his canoe ready and they went to visit the house of the youth s father They arrived there and found the youth s father sitting at his salmon weir crying Then the youth pulled the rope and lifted the net The father recognized his son He saw him at the salmon weir Then all the people came to the house of the old man The youth told him to clean it Then he entered the house of his father and he related to all of them "The salmon desires to have cedarbark It is said that the salmon eat it (He stayed there with his wife and his children) Then the (other) children quarreled and fought with them Then she grew angry and deserted her husband

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* This means probably the soul which is believed to be located in an egg-shaped bone in the nape.

8 The Ascent to Heaven

Nusror a'ncta	Tx sisintc x	wa	tsitstsipe
There was a hunting hut at the water	They shot		birds

Anaik stô o	x sgyasqs	Sx ik lx ls	tl	sonx	t'aix	K 'x tist o
He wished	to go up	He wished to see	the	sun	that o	He saw

wunaqE nq	ar	tu	Lok t aq	SLokoalaya mktls
ducks	at	the	above	He found something supernatural

Ix c eqsatis	x tok sto tiq	Nêêtstator u aqstls	k lx autô o
He cured them	he worked on them	He spat on their eyes	they saw

Skoâ tstatit	x i	Smoq'oa'ns	Lcptsotstô o	k lx isiJo tl	su axist
They called him	the	Smoq oa ns	He returned	He saw him the	younger brother

ta	kôxlo lêmx 'au'tx.	Axsâ nix t'at) o	ta	manau tx	K 'x litsts
the	their country	He made know	the	their father	I saw him

k lx litsts	ta	q oalê mts "	"Alatsik nu'ks	tl	nu kiôotsr'mno,"
I saw him	the	my elder brother	Why you	the	liar you

tsô'tkuts	ta	manau'tx	uL	tsenL	Ts'ak o'liwa	wa
said	the	their father	to	him	I speak the truth	

sL iu'kts'awa	"Wa	iLLans'	oqxê'x "	A'xko	ai'ots	sk a
what I said	"Go		call him	Not	he says	and

poLs a′xko anal′k s ti ta ι′k ims k a ema′ls sk a ostxs
he comes not he wished the dirty and he goes and enters

Anoai′k kx sk a ia s k a ι mats sk a ostxs Koloxsqtô′o
He will and good and he goes and enters He invited the people

ta manau′tx sk a qotsι′m tu sôī au′tx Qotsanaqtɔ′o tu
the their father and wash the their house They washed the

smātE′mx tx Tsnak ektô′o poLsktι o Ōstxs Alats ιaktô′o
people They were ready he came He entered He informed them

sa uL nai′s wu sLokoa′las anoaik st ɔ′o sk a tRlaxo′im
how he found something supernatural he wished and he showed

x sto smatE′mx stx sk a wuntsti s tu s aɪ okoala stx tu
his people and killed with the his supernatural power the

naxF ntx bk a onatι s to sta apsu Latx sk a sq aLtotls
ducks And he gave them to the those of his town and their meat

Tsaiotstutisktô o Anoaι k stuts sk a lι ptuts uL ta sonx t aix
That is all He wished and returned to the sun that one

Koanatsktu o ta sa axistx snuL api k skoilu ts AI taā axatisktô o
He cried the younger brother he wished to accompany him He did not want him to go

Al′lutstx axko tsnuk s ι axaLE ms Siutā namElats taiā mk
He left him not he returned He became supernatural he threw

tisktô o wa tsitstsipo′ ats sk a sipx hoa′ts wa aL Emstanā′losiLs
them down the birds and he made happy the us Indians

Translation

(Two brothers built) a hut for hunting (birds) on a river They shot birds One of them wished to go up to see the sun (When he reached the sky) he saw ducks He found something supernatural (The ducks were blind) He cured them by spitting on their eyes Then they regained their eyesight They called him Smoq oā ns He returned and his younger brother saw him He went and told their father I saw my elder brother Why do you tell such lies," replied the father "I speak the truth ' ' Then call him " 'He says he will not come He does not want to enter a dirty room He will come and enter when it is clean " The father invited the people and they cleaned the house The people washed themselves When they were ready he came He entered He informed them how he had found a supernatural helper He wished to show his power to them and killed many ducks by the aid of his supernatural helper, and he gave the meat to the people of his town That is all Then he wished to return to the sun His younger brother cried and wished to accompany him, but he did not want him to go He left him and did not return He became a supernatural being He threw down birds and made us Indians happy

The Varying Ratio between Gold and Silver

By Frederick Prime

Mr. Prime made some remarks on the varying ratio between gold and silver. Between 1687 and 1861 the ratio of silver to gold varied between 1 : 14.14 (1760) and 1 : 16.25 (1813). But in 1862 silver reached a value from which there has been a steady decrease with slight exceptions up to the present time. The ratio for this period* has been as follows:

	GOLD	SILVER		GOLD	SILVER
1862	1	15 35	1878	1	17 94
1863	1	15 37	1879	1	18 40
1864	1	15 37	1880	1	18 05
1865	1	15 44	1881	1	18 16
1866	1	15 43	1882	1	18 19
1867	1	15 57	1883	1	18 64
1868	1	15 59	1884	1	18 57
1869	1	15 60	1885	1	19 41
1870	1	15 57	1886	1	20 78
1871	1	15 57	1887	1	21 13
1872	1	15 63	1888	1	21 99
1873	1	15 92	1889	1	22 09
1874	1	16 17	1890	1	19 76
1875	1	16 59	1891	1	20 92
1876	1	17 88	1892	1	23 72
1877	1	17 22	1893	1	26 49

The percentage of production of the two metals since 1831 is as follows, given in values, not in weights:

	GOLD	SILVER		GOLD	SILVER
1831–40	35 2	64 8	1886	40 8	59 2
1841–50	52 9	47 1	1887	46 0	54 0
1851–55	78 3	21 7	1888	43 9	56 1
1856–60	78 1	21 9	1889	44 2	55 8
1861–65	72 9	27 1	1890	42 2	57 8
1866–70	70 0	30 0	1891	42 4	57 6
1871–75	58 5	41 5	1892	42 5	57 5
1876–80	53 0	47 0	1893	42 7	57 3
1881–85	45 5	54 5			

In consequence of the demonetization of silver and the consequent increased demand for gold, which has increased in value judging by its increased purchasing power, the output of the world in this metal has increased materially.

In 1891 there were produced	196 586 kilograms	= $130 450 000
In 1893 " "	236 574 "	= 157 228 100

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*Twenty-second Annual Report Director of the Mint, 1894.

Africa has most markedly increased its output and in 1893 became the third producing portion of the world the output being almost entirely in South Africa While in 1891 Africa produced 23 687 kilograms = $15 742 400 this had increased in 1893 to 44 090 kilograms = $29 305 800 and it is probable this output will be greatly increased in the near future

Of the remaining large gold producing countries the output for 1893 is estimated to be as follows

United States	54 100 kilograms	= $35 955 000
Australia .	53 698	= 35 688 000
Russia	39 805	— 26 454 400

It is thus apparent that Africa has surpassed Russia

With the greatly increased output of gold the fields known to be rich but still undeveloped (South Africa Australia and South America) and with the downward tendency of silver it seems impossible that bimetallism can exist for any length of time in the near future even by the consent of all the nations of the globe Gold may be made the circulating medium or silver may be but with the continual disparity in value between the two metals which is not constant but varying daily the two can only coexist in subsidiary coinage where they are mere tokens

The fact is frequently lost sight of that gold and silver are only articles of merchandise like wheat cotton or iron, and intrinsically are of less value than any of the three latter A coin only means that the country whose stamp it bears guarantees it to be of a certain weight and to contain a certain percentage of gold or silver Common agreement has made these articles of merchandise the means of paying balances as a matter of convenience

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The Significance of the Jugal Arch

By Daniel Denison Slade

(Read before the American Philosophical Society March 15 1895)

It is difficult to explain why that portion of the mammalian cranium which presents so prominent and striking a feature even to the most careless observer as does the jugal or zygomatic arch should not have been considered worthy of more extended scientific notice than it has received Cuvier, in his admirable treatise, *Anatomie Comparée*, seems to have been the only writer familiar to us who has comprised the anatomy and physiology of this region in any lengthy description

While the present paper does not pretend to have by any means exhausted the subject it claims to have brought together for the first time under the light of modern science, a concise statement of the chief modifications which the arch undergoes in the various orders of the Mammalia

This osseous bridge connecting the lateral regions of the cranium with those of the face is often composed of three bones, the malar or jugal in the centre, flanked on either side by the zygomatic process of the squamosal and by the malar process of the maxilla. Again, it may be reduced to two, the process of the squamosal and the jugal, or the process of the squamosal and the postorbital process of the frontal. The number of bones present depends upon the advanced or receding position occupied by the orbit, also upon the position held by the articulation of the mandible in relation to the orbital cavity, whether this be above, below or on a level with the latter. Although the arch in certain cases is imperfect, it can rarely be said to be entirely absent.

The strength of the jugal arch, the most important factor in its existence, depends upon its line of direction, whether this be straight or curved, and upon the amount and manner of this curvature; upon the number, size, extent of surface and mode of union of its component bones. These in their turn, are correlated with the articulation of the lower jaw and with the amount of surface presented by the ascending ramus; with the neighboring fossæ, crests and processes, with the dental series and necessarily with the muscles concerned in mastication, varied as these are in their action.

The jugal arch as it exists in the Carnivora offers an instructive example of the various points to be considered in its morphology. In the tiger, for example, the arch, composed of three bones—the squamosal, malar and maxilla—presents an extraordinary horizontal curvature, thereby vastly increasing its expanse, giving great width to the temporal muscle which, taking its origin from the largely expanded surface of the parietal and from the occipital sagittal crest, passes forwards and downwards to be inserted into the high, wide, oblique, coronoid process of the mandible. This increase in length of the arch, due to the great horizontal curvature, is also seconded by the advanced position of the orbit upon the skull, and by its height above the level of the articulation of the mandible.

The vertical curvature of the arch, with the convexity above and concavity below, denotes increased power of resistance to the strain produced by the muscular fibres of the masseter, which springing from the under side of the arch, are carried obliquely backwards and downwards to be inserted into the deeply grooved ascending ramus. The action of the pterygoids, which is similar to that of the masseter, is also relatively powerful. The fibres rising from the pterygoid fossæ and plates are inserted into the inside of the angular portion of the lower jaw, and into the neck of the condyle. The suture by which the processes of the squamosal and jugal are joined extends very obliquely through a greater portion of the arch, this obliquity imparting much strength to the bony structure, and thereby enabling it to resist the upward pressure.

The convex surface of the transverse condyle of the mandible, received into the deeply grooved glenoid cavity, forms the hinge like articulation fitted for the vertical action of the jaw, and which is necessary for the pre hension, tearing and division of the flesh by means of the characteristic teeth.

In the Edentata, on the other hand, the cranium of the great ant eater exhibits a jugal arch which is the extreme opposite of that which has been thus partially described. Here it is very incomplete, consisting of a short styliform process given off by a very rudimentary jugal, and of an extremely small tuberous zygomatic process from the squamosal, no union being formed between the two. There is no postorbital process of the frontal, and no separation between the orbital and temporal fossæ. Under these circumstances the muscular development concerned in the preparation of the food is very feeble, correlated as it is with the entire absence of teeth and any necessity for mastication.

Between these two extreme modifications there are many intermediate forms of this arch, as will become evident as we study them in the different orders of the Mammalia.

In the PRIMATES the arch is composed of two bones, the squamosal and malar, which are joined by a serrated suture which inclines downwards and backwards, the amount of inclination being modified in the various groups of this order. The strength and curvature of the arch also widely vary, as does also the extent to which the various crests and ridges for muscular attachment are developed. In man the arch is generally slender, slightly curved in its horizontal axis, and presents a very moderate convexity upwards in its vertical curvature. Owing to the slight horizontal curvature outwards, the temporal fossa is relatively shallow, consequently allowing but little development of the temporal muscle. This condition, however, is subject to modifications in the various races of man. The maximum breadth of the cranium is at the jugal arches, and it is at these points that craniologists now take the bizygomatic diameter of the face.

Humphrey, in his *Human Skeleton*, in speaking of this arch, says: "The upper surface of its root forms a smooth channel for play of the temporal muscle. In the negro the greater width of this channel throws out the zygoma into stronger relief, and added to the flatness of the squamosal portion affords more space for the temporal muscle." This general statement is not confirmed by any cranial measurements, neither does Mr. Humphrey state what he means by a negro. Probably he intended, as in common parlance, to designate the African, although this designation is ambiguous, as it is well known that the crania of the different tribes of Africa differ very essentially in their general formation, as well as in their special cranial measurements.

Although the cephalic measurements of Broca, Topinard, and others allow a slight increase in the horizontal curvature of the arch in certain instances, which signify a greater development of the temporal muscle, as well as a more extended surface for the attachment of the masseter, yet, as Topinard remarks in speaking of the bizygomatic diameter, ' This measurement by itself often presents difficulties, purely accidental and local, and entirely apart from the general type Thus in every race, cases occur in which the zygomatic process of the squamosal instead of joining directly with the malar bends outwards and then resumes the general characteristic direction of the arch whether this be straight or gently curved The greatest width under the circumstances falls upon the summit of the bend which causes the measurement to be unduly augmented '

As a result of the measurements taken upon the crania of the Africans in the collection of the Peabody Museum and of the Harvard medical school there was a slight increase in the bizygomatic breadth over those of other mixed European skulls But no dependence should be put in such measurements for although in one collection the crania were classified in general as African nothing was known of their history and still less of those with which they were compared

Tables given by Topinard Flower and others of the bizygomatic breadth compared with the total length of the face apparently do not support the statement of Mr Humphrey A more satisfactory method of ascertaining the truth of the point in question would be to obtain by measurement the actual width of the groove in the upper surface of the posterior root of the zygoma of the African skull and compare this with that of other races This can be properly effected by taking first the bizygomatic breadth and then the bisquamosal at the most prominent point on the line of suture between the squamosal and alisphenoid the difference between the measurements would give the breadth of groove

Cuvier reminds us that the size of the temporal fossa and its muscle have close relation with the age of the animal In the young the brain and its case are developed but the jaws are small and the forces which move them are wanting in energy But with age these last are developed, while the intellectual powers constantly diminish In civilized man the equilibrium is maintained between the growth of the brain case the intellectual powers and the masticatory organs Can any relation however remote be traced between the developed masticatory powers of the uncivilized negro and the flattened squamosal of his brain case as described by Mr Humphrey?

The Anthropomorpha have strong jugal arches longer than in man, and presenting marked horizontal and vertical curvatures Although strictly speaking it is composed of only two bones --the zygomatic process of the squamosal and the jugal this last rests upon a process of the maxilla so much developed that in many cases it might be rightfully considered as entering into the formation of the arch The suture which joins the squamosal and jugal is long and serrated its great inclination downwards and backwards vastly increasing the strength of the parts as also the power of resistance

In the gorilla, the arch is relatively broader and more developed than in the other higher apes The process of the squamosal presents a sudden vertical convexity upon its upper border, at a point corresponding to the junction of the anterior transverse root the remaining portion of the arch being nearly of the same width The breadth of the channel for the play of the temporal muscle is proportionally large The entire structure of the arch especially in its horizontal vertical curvatures exhibits enormous strength In the adult male all the cranial ridges attain their maximum size thus presenting a largely increased surface for the origin of the temporal muscle while the relative greater breadth of the ascending ramus of the mandible and the increased width of the pterygoid fossæ are correlated with a corresponding development of the masseter and pterygoid The long and massive canines have reference to the powerful action of the last named muscles while their use has a sexual relation The glenoid cavity is transversely broader than in man and more shallow its anterior boundary formed by the anterior root of the zygoma being scarcely developed thus allowing greater freedom for the antero posterior movement of the articulation of the mandible

In comparing the skull of the male gorilla with that of man we shall find that the arch of the former is not only vastly stronger but the bones present a different form and proportions The squamosal is as long and vertically as wide as the malar portion of the arch while its upper border rises into an angular form constituting a very marked convexity, no trace of which is to be seen in man In the latter the jugal portion of the arch decreases in depth after leaving the body of the bone whereas in the gorilla it continues of the same depth and is relatively longer

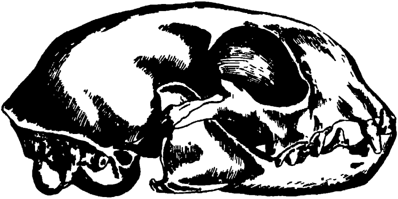
In the orang the horizontal curvature of the arch is greatly produced and strongly developed at the position corresponding to the malar squamosal suture Its inferior border is flattened and thickened The vertical curvature however is not so great while the channel for the temporal muscle is relatively wider than it is in the gorilla The crests and ridges of the cranium especially in the male express the great energy of this muscle although the general outline of the arch is far less massive than in the latter ape

The jugal arch of the chimpanzee presents much resemblance to that of man being narrow and with slight curvature either horizontal or vertical The malar is anteriorly flatter and its orbital process is longer and narrower at its base The extent of surface for the development of the temporal muscle is greater than in man and the width of the channel relatively increased

The slight modifications observed in the arch of the gibbons exhibit a distinct tendency to those shown in the lower types of the Simiadæ In the old world monkeys the arch takes on a sigmoidal curvature thus presenting upon its superior border a slight convexity behind and a corresponding concavity anteriorly The extent of this curvature varies in the different groups In the new world monkeys the postglenoid process of the squamosal is largely increased while the remarkable extent of the ascending portion of the ramus both vertical and antero posterior has reference in the howlers to the great development of the vocal organs, rather than to any unusual energy of the masticatory muscles.

In the Lemuroidea, the family of the common lemurs have an arch which in most cases is nearly straight, narrow, long, and distinguished by a malar squamosal suture, which is almost horizontal in direction, the amount of the overlapping of the jugal by the lengthened process of the squamosal being exceptional, while in some cases the jugal is partially underlapped by a process of the maxillary

As regards the Carnivora, the general characteristics presented by the arch and the adjacent regions have already been considered, when taking that of the tiger as a typical illustration of their morphology The order of the Carnivora is divided into two suborders, the true or fissiped and the pinniped (the latter being organized mainly for an aquatic life) The true Carnivora may be classified under three sections—Æluroidea, Arctoidea and Cynoidea The arch in the families comprehended under the first of these sections presents no modifications specially different from those offered by the Felidæ, unless we may except the Hyænidæ, in which the jugal arch is extremely wide and strong and the horizontal curvature very great. The postorbital of both frontal and jugal are largely developed, approximating each other, while the sagittal crest is high, giving large attachment to the very powerful muscle of the temporal The ascending rami of the mandible present the corresponding extent of surface for muscular attachments In the section Arctoidea, the family Ursidæ present an arch which is longer, and of which the horizontal curvature is greater than that of the Felidæ, while the jugal squamosal suture is more oblique, and the entire bridge much less developed In the Mustelidæ, the upward vertical curvature is large, but the entire arch is relatively slender



In the Cynoidea, the strength and curves of the arch occupy a position midway between those of the other sections, being more developed than those of the Arctoidea but exhibiting less strength than those of the Æluroidea

The suborder Pinnipedia is easily separated into three families—the Otaridæ the Trichechidæ and the Phocidæ The first of these bear genetic relationship to the Ursidæ in many of the cranial characters The arch is composed as in the Fissipedia of three bones Of these the jugal presents a wide backward progressing process which divides into a short upper and a long lower one receiving and supporting the extended process of the squamosal as in a mortise

The postorbital processes are well developed A more or less distinctly marked sagittal crest exists with an extended surface for muscular attachment The coronoid surface of the ascending ramus is wide but not produced above the level of the arch

In the Trichechidæ of which Trichecus is the single genus the maxilla enters largely into the formation of the arch the jugal is shorter and broader than it is in the other families and nearly quadrangular sending up a prolonged postorbital process from its superior border while posteriorly its inferior border underlies the process of the squamosal The condylar surface of the mandible points backwards while those of the rounded coronoids are scarcely lifted above the dental series

In the Phocidæ the composition of the arch does not differ essentially from that of the Otaridæ although it is relatively much weaker There are no postorbital processes and the sagittal crest is less distinctly marked The angle of the mandible is not inflected

The Chiroptera are divisible into the suborders Megachiroptera and Microchiroptera The family Pteropodidæ includes all the characters of the first of these suborders In Pteropus the arch is long and relatively slender and composed of three bones of which the jugal is splint like adhering to the outer and under surface of both the squamosal and maxilla which meet above it and form the span

The postorbitals of the frontal and jugal not unfrequently meet and thus complete the bony orbit There are strongly developed crests both occipital and sagittal The coronoid surface of the mandible is fitted for large muscular attachments being high broad and recurved The angle is flattened and rounded presenting an extended surface Of the six families into which the suborder Microchiroptera is divided the Vespertilionidæ may be taken as the typical representatives The arch is slender and complete throughout the entire group except in some of the Phylostomidæ in whom it is entirely wanting

When present the horizontal curvature is large and the vertical also considerable the convexity being upwards In its conformation it is similar to that of the Pteropodidæ The orbit is incomplete the temporal fossæ are relatively large The parietal crest is but slightly developed The mandible is stout and high at the symphysis The ascending ramus is compressed and bears a coronoid process which is strongly indented for muscular attachment Immediately below the condyle, is a backward projecting process The dental series in this suborder resembles that of the Insectivora the molars being cuspid Adopting the classification of the highest authorities and notably that of Dr Dobson the Insectivora may be divided into two suborders the Dermoptera and the Insectivora Vera Accepting the above classification the Insectivora so far as concerns the jugal arch may be brought into three groups

1 Those in which the arch is complete and well developed comprising the Tupaidæ Macroscelidæ Rhynchocyonidæ Galeopithecidæ

2 Those in which the arch is complete but more or less feebly developed comprising the Erinaceidæ Talpidæ Chrysochloridæ

3 Those in which the arch is partially or wholly deficient comprising the Centetidæ Potamogalidæ Solenodontidæ Soricidæ

The Tupaia may be taken as a typical form of the first group The jugal arch is well developed a postorbital process from the frontal meeting a corresponding one from the malar thus forming a complete bony orbital ring The malar has a large longitudinal oval vacuity which although unique in this case when taken with similar vacuities in the palate of this genus as also in some of the other Insectivora points unmistakably to the Marsupialia

The horizontal curvature of the arch is sufficient to counteract any inherent weakness due to the vertical curvature with its convexity downwards The temporal fossa is moderately extended while the coronoid surface of the mandible presents a large backward projecting surface rising high above the transversely produced condyle

In the second group where the arch although complete is for the most part weak the cranium presents marked modifications In Erinaceus and Gymnura the arch is formed mostly by the processes of the squamosal and maxilla which join while the malar is very small and occupies in a splint like form the outer and under sides of the centre of the arch There no traces of any postorbital processes The temporal fossa is deep and extended while additional surface is afforded for the temporal muscle by the prominence of the sagittal and occipital crests The ascending ramus of the mandible with its broad concave coronoid surface and the development of the pterygoid fossæ denote increased masticatory powers, in spite of the apparent weakness of the buttress

In the Talpidæ certainly in all of the truly fossorial of the family the jugal arch is slender and exhibits no distinct malar bone, no occipital or sagittal crests and no postorbital processes

The mandible is long and the vertical portion presents a moderately extended coronoid surface with a small transverse condyle The infraorbital foramen is of great size being a very slender osseous arch which serves for the transmission of the large infraorbital branch of the trifacial, affording the necessary supply of sensory nerves to the muzzle

In the Chrysochloridæ which in the general shape of the skull present modifications different from all other Insectivora the jugal arch is in some species so expanded vertically that as Dr Dobson remarks ' their upper margins rise above the level of the cranium giving additional origin to the large temporal muscles There is no postorbital process given off either by the frontal or zygomatic arch As regards the mandible the coronoid process is little elevated and in some species is nearly level with the transversely extended condyle

In the third group the arch is incomplete and in one instance at least may be described as entirely absent In the Centetidæ the skull is long and narrow and marked by largely developed occipital and sagittal crests which serve as attachments for muscles of temporal origin The zygomatic processes of the maxilla and squamosal are very short and rudimentary while the malar is entirely absent The temporal fossæ are very large and the skull retains nearly the same width at their anterior and posterior regions There is not a trace of a postorbital process The infraorbital foramen is circular and capacious There are no pterygoid fossæ The coronoid process of the mandible is largely developed its inner surface being concave and its outer surface flattened The condyle is small and circular while the glenoid surface is transversely concave

The other families of this group with the exception of the Soricidæ agree with the Centetidæ in the modifications of the skull that have been described In the Soricidæ the cranium is broadest just behind the glenoid surfaces There is no jugal arch and no trace of a postorbital process Frequently there is present a strongly marked lambdoidal ridge as well as a sagittal crest There is no pterygoid fossa but very large vacuities exist on each side of the basis cranii The mandible resembles that of the Talpidæ although the horizontal ramus is shorter while the ascending one presents a very large and singularly deep excavation upon its internal surface quite characteristic of the genus The articular surface of the condyle looks backwards instead of upwards The angle of the jaw is elongated and thin The infraorbital is large and bounded posteriorly by an osseous bar

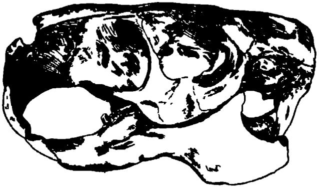
The jugal arch in the Rodentia is always present and is generally complete although it exhibits many modifications in its composition Three bones form the arch which is straight or slightly curved horizontally while it almost invariably presents a curvature downwards The position of the jugal therein serves as a determining character in grouping the various families of the order

The temporal fossa is often small showing feeble energy in the action of the temporal muscle On the contrary the pterygoid plates and fossæ are often largely increased in relation to the enlarged development of the muscular insertions In close connection with these conditions the coronoid process of the mandible is small and even rudimentary while the parts about the angle are largely expanded The condyle is little elevated and presents with few exceptions an antero posterior articulating surface Postorbital processes of the frontals exist in a few of the families but in no case is there a corresponding process from the arch The orbit is never separated from the temporal fossa

In many of the rodents there is present a more or less extensive dilatation of the infraorbital foramen, through which passes, in addition to the nerve, that portion of the masseter muscle which has its insertion upon the maxilla This extends around the back of the jugal process of the maxilla in a pulley-like manner to an insertion just below the socket of the mandibular præmolar, and thus cooperates with the temporal in moving the mandible in a vertical direction This attachment of a head of the masseter is peculiar to the order, and explains the use of the vacuity in the maxilla which oftentimes is of vast relative proportions

All existing rodents fall into two groups, the Simplicidentata and the Duplicidentata The first embraces the Sciuromorpha, Hystricomorpha, Myomorpha, and the second, the Lagomorpha.

In the Sciuromorpha, the jugal forms the greater part of the arch, extending forward to the lachrymal and posteriorly to the glenoid cavity, of which it forms the outer wall, and is not supported below by a continuation backwards of the process of the maxilla. In the more typical forms there is no enlargement of the infraorbital opening, while the postorbital processes of the frontals are characteristic of the family Sciuridæ The external pterygoid plate is entirely wanting and there is no fossa.



The arch in the Myomorpha is for the most part slender, and the jugal, which does not extend far forward, is supported by the continuation below of the maxillary process. The zygomatic process of the squamosal is short. No postorbital process of frontal exists. The infraorbital opening varies. In the family Muridæ, especially in the typical forms, this opening is perpendicular, wide above and narrow below, while the lower root of the zygomatic process of the maxilla is flattened into a thin perpendicular plate. Very much the same condition exists in the Myoxidæ, while in the Dipodidæ, the foramen is as large as the orbit, is rounded, and has a separate canal for the nerve The malar ascends to the lachrymal in a flattened plate In close connection with these conditions the coronoid process of the mandible is small and rudimentary while the parts around the angle of the ramus are much developed

In the Hystricomorpha the arch is stout The jugal is not supported by the continuation of the maxillary process and generally does not advance far forward The infraorbital vacuity is large and is either triangular or oval The coronary process and the condyle are but slightly elevated above the dental series

In the Chinchillidæ the jugal extends forward to the lachrymal In the Dasyproctidæ Cœlogenys is characterized by the extraordinary development of the jugal arch which presents an enormous vertical curvature two-thirds of the anterior portion of which constituting the maxilla is hollowed out into a cavity which communicates with the mouth The nerve passes through a separate canal adjacent to the infraorbital opening

The jugal arch in the suborder Duplicidentata is well developed

In the family Leporidæ there are large wing like postorbital processes while the jugal but feebly supported by the maxillary process continues posteriorly to aid in the formation of the outer side of the glenoid articular surface passing beneath the process of the squamosal

The Lagomyidæ have no postorbital processes and the posterior angle of the jugal is carried backward nearly to the auditory meatus The infraorbital opening in the Duplicidentata is of the usual size The angle of the jaw is rounded and the coronoid process much produced upwards

The Ungulata may at the present time be divided into the Ungulata vera including the two suborders Perissodactyla and Artiodactyla and the Ungulata polydactyla which comprises the two suborders Hyracoidea and Proboscidea

In its morphology the jugal arch of the Ungulata presents various modifications With few exceptions two bones alone compose it the squamosal and jugal which are connected by a suture the general direction of which is horizontal Both the horizontal and vertical curvatures of the arch present considerable variations as does also its relation to the neighboring parts

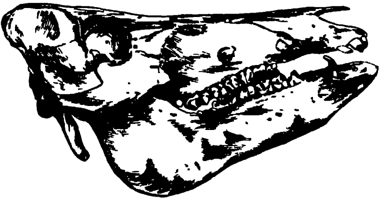
In the Perissodactyla the family Equidæ exhibits an arch which although relatively slender is quite exceptional in its arrangement The large and lengthened process of the squamosal not only joins the greatly developed postorbital process of the frontal but passing beyond forms a portion of the inferior and posterior boundary of the orbit The malar spreading largely upon the cheek sends back a nearly horizontal process to join the under surface of the squamosal process above described while the orbit is entirely surrounded by a conspicuous ring of bone thereby clearly determining the bounds between it and the temporal fossa which last is remarkably small This fossa is bounded above and posteriorly by more or less well developed crests and ridges The pterygoids are slender and delicate without the presence of any fossa The glenoid surface is much extended transversely concave from side to side, and bounded posteriorly by a prominent postglenoid process The angle of the jaw is much expanded The condyle is well elevated above the molar series while the coronoid process is long narrow and slightly recurved

In the Rhinoceridæ and Tapiridæ the arch is strongly developed and composed of the squamosal and jugal processes which are joined at about its centre by an oblique suture from above downwards backwards and upwards In the Tapiridæ the arch is long owing to the advanced position of the orbit There is a small postorbital process largest in the tapir but the orbital and temporal fossæ are continuous The surface for the temporal muscle is extensive The glenoid fossa presents a transverse convex surface to articulate with the corresponding one of the mandible which is not much elevated above the dental series The coronoid process is slender and recurved while the angle is broad compressed somewhat rounded and incurved

In the Artiodactyla the arch is slender and is composed of the process from the jugal which passes backwards beneath the corresponding forward projecting process of the squamosal the juncture being by a suture nearly horizontal in direction and longest in the Cervidæ The jugal sends up a postorbital process to meet the corresponding descending one of the frontal the suture which unites them being about midway The bony orbit is thus complete while the jugal is forked posteriorly The temporal region is relatively small The horizontal curvature of the arch is very slight The glenoid surface is extensive and slightly convex with a well developed postglenoid process The pterygoids present a large surface and are situated nearer the middle line than is the case in the Perissodactyla The condyle is broad and flat and the coronoid process is long compressed and slightly recurved The angle is rounded and much expanded

The Tylopoda alone among the Ruminantia have large surfaces with crests and ridges for the increased development of the temporal muscle The horizontal curvature of the arch is greater than in the true ruminants consequently the temporal fossa is wider and deeper—all in correlation with the powerful canine teeth The forked articulation between the molar and squamosal is also more strongly marked

Among the non Ruminantia the family Suidæ exhibit an arch in which the process of the jugal underlying the squamosal extends back to the glenoid fossa—the two bones being connected by a suture which is vertical anteriorly for the depth of half the bone and then horizontal The postorbital process does not meet the frontal in fact all traces of this are lost in Sus scrofa but in the peccary and Barbaroussa it is quite prominent The arch is short owing to the position of the orbit and both vertical and horizontal curvatures are considerable The narrow transverse condylar surface of the mandible, and the small coronoid process with its rounded surface, are but slightly raised above the level of the alveolar surface The pterygoid surface is extensive and the fossa deep



In the Hippopotamidæ, the arch is broad and strong. Its superior border presents a marked sigmoid curvature, and the convexity which is always posterior, is in this case much shorter in proportion. The temporal fossæ, as also the surfaces for the muscular insertions, are extensive The pterygoid surface is not so large as in the Suidæ The glenoid fossa is slightly concave, but not bounded externally by a continuation of the jugal The condyles of the mandible are nearly on a level with the molars, and the coronoid process is small and recurved. The angle is greatly modified for muscular attachment.

In the Hyracoidea, the arch is composed of three bones, of which the jugal is the most important. Resting anteriorly upon the maxilla, the jugal sends backwards a process to form the external boundary of the glenoid fossa It also sends upwards a postorbital process to meet a corresponding one from the parietal alone or from the parietal and frontal combined, thus completing the bony orbit. Both horizontal and vertical curvatures are slight. The surface for the temporal muscle is largely developed while the pterygoid fossæ are well marked. The ascending ramus of the mandible is high, and the angle is rounded and projects very much behind the condyle, which last is wide transversely, and rounded on its external border The coronoid process is small, slightly recurved, and not on a level with the condylar surface.

In the Proboscidea, the arch is straight, slender, and composed of three bones The maxilla forms the interior portion, while the jugal supported upon the process of the maxilla, meets that of the squamosal in the middle of the arch, and is continued under this as far as the posterior root. This modification is unlike that of any other ungulate. There is a small postorbital process from the frontal. The temporal surface is extensive and that of the pterygoid considerable The ascending ramus of the mandible is high and the condyle small and round The coronoid process is compressed and but little elevated above the molar series while the angle is thickened and rounded posteriorly

The jugal arch in the order of the Cetacea presents some singular modifications In the Delphinoidea the squamosal frontal and jugal enter into its composition The squamosal sends forward a large bulky process which nearly meets the descending postorbital process of the frontal The jugal is an irregular flat bone covered by the maxilla and sends back from its anterior and internal border a long and very slender process curved slightly downwards to articulate with the short obtuse process of the squamosal thereby forming the lower boundary of the orbit So far as the relations of the squamosal and frontal are concerned the portion of the arch thus formed is a counterpart of that of the horse although the union of the two bones is much more complete in the latter animal The jugal in the horse is relatively a much larger bone and sends back a well developed process which underlies that of the squamosal with which it is joined by a nearly horizontal suture thus forming a strong suborbital bony wall The delicate character of the suborbital process of the jugal and its union with the squamosal in the Delphinoidea render it difficult at first sight to determine its relation to the arch and yet when compared with that of the horse its homological character cannot be disputed

In the Balænoidea much the same conditions are presented except that the suborbital process of the jugal is both stronger and more curved The small capacity of the temporal region as well as the limited extent of the arch in the Cetacea are correlated with the modifications presented by the mandible in which the condylar surface is small and looks directly backwards There is no ascending ramus and the coronoid process is quite rudimentary—all of which conditions are in direct relation to the nature of the food and absence of the masticatory movements

In the Sirenia the arch is greatly developed being composed of the squamosal and the jugal The former of these is much thickened and presents upon its external face a smooth convex surface In the Manatus this process of the squamosal rests loosely upon the process of the malar which underlying it extends back as far as the glenoid having first formed a rim which is both suborbital and postorbital besides sending a broad plate downwards and backwards thereby greatly increasing the vertical breadth The orbital fossa is separated almost completely from the temporal by a bony partition The surface for the muscular attachments both of the temporal and masseter are extensive while the pterygoid plates and groove are relatively enlarged The vertical curvature of the arch is great but the horizontal is inconsiderable The ascending ramus of the mandible is broad compressed with rounded angle and surmounted by an obliquely placed small convex condyle much raised above the molar series The coronary surface is broad directed forwards and but slightly elevated above the condyle

In the Dugong the arch is much less massive There is no postorbital process from the jugal and consequently no separation of the orbital and temporal fossa by a bony orbit The coronoid process of mandible looks backward

Although the horizontal curvature of the arch is very slight in both genera of the Sirenia the temporal fossæ are deepened and extended conditions due to the walls of the cranium being compressed in a lateral direction, which materially increases the extent of surface for muscular attachment and development

In the order Edentata the jugal arch also offers unusual modifications In the Myrmecophagidæ it is very incomplete being composed of the proximal end of the jugal articulating with the narrow projecting process of the maxilla and a very rudimentary fragment of the squamosal These separate portions however do not meet in fact they are widely separated There is no boundary between the orbital and temporal fossæ the latter being comparatively shallow The glenoid fossa is a slight cavity running antero posteriorly, and well adapted to the pointed backward projecting condyles of the mandible whose long straight horizontal rami present neither coronoid process nor angle In Cycloturus the mandible is somewhat arched and presents a well marked angular process as well as a coronoid surface slightly recurved

In the Bradypodidæ, containing the two forms Bradypus and Cholœpus, the arch is imperfect consisting of the jugal which is narrow at its articulation with the lachrymal and maxilla but which widening out into a broad compressed plate terminates posteriorly in two processes the upper pointing backwards and upwards, while the lower looks downwards and backwards The straight process of the squamosal although fairly developed fails to meet either of those of the jugal There is a post orbital process of the frontal, which is best marked in Cholœpus The glenoid is shallow and narrow from side to side The mandible, widest in Cholœpus develops a rounded convex condylar surface, well raised up from the dental series, while the coronoid surface is large and recurved The rounded angular process projects backwards to a considerable extent The symphysis in both forms is solidified, while in Cholœpus it projects forwards into a spout like process The temporal surface for muscular attachment is large, as also are the pterygoid plates

In the Dasypodidæ, the arch is complete, and in its formation the jugal largely enters This bone extends from the lachrymal and frontal to the process of the squamosal, the anterior third of which it underlies There is no postorbital process of the frontal The glenoid presents a broad slightly convex, transverse surface The pterygoids are small The mandible has a high ascending ramus the condyle is transverse and above the alveoli, while the coronoid surface is large and the angle broad and projecting

In the Manidæ, the arch is incomplete, owing to the absence of the malar, which if present would occupy almost the exact centre of the arch, the length of the squamosal process and that of the maxilla being nearly equal on either side. The temporal and orbital fossæ form one depression in the side of the skull. The rami of the mandible are slender and straight and without teeth, angle or coronoid process. The condyle is not raised above the level of the remainder of the ramus.

In the Orycteropidæ the arch is complete and the horizontal curvature is very slight. The postorbital process is well developed. The mandible rises high posteriorly, with a coronoid slightly recurved and with an ascending pointed process on the angular edge below the condyle.

In the Marsupialia the jugal arch is always complete and composed of the jugal resting on the maxilla and squamosal, the first extending from the lachrymal anteriorly to the glenoid fossa posteriorly, of which it forms the external wall. The process of the squamosal passes above the jugal, being united to it by an almost horizontal suture. The horizontal and vertical curvatures of the arch are considerable and the space for both temporal and masseter muscular insertions is extensive. The various ridges and crests are large, especially in the Dasyuridæ and Didelphidæ. The postorbital of the frontal is present as a rule, although in most forms inconsiderably developed. The ascending ramus of the mandible is less elevated than in several of the orders of the Mammalia. The condyle is but little raised above the molar series. The masseteric fossa is extremely projected at its lower external border and the mandible, with one exception, has an inverted border to the angle.

In the Monotremata the Echidnidæ possess an arch in which the squamosal is compressed and sends forward a slender straight process to join the corresponding slight shaft-like process of the jugal. The horizontal curvature is extremely small.

In the Ornithorynchidæ the arch is made up of the malar resting upon a process of the maxilla, which, passing straight backwards, unites with the squamosal process that rises far back on the sides of the cranium. While the mandible of the Echidna has but the rudiments of the parts which usually enter into its formation, that of the Ornithorynchus is more fully developed in relation to the attachment of the horny teeth.

In studying the significance of the jugal arch according as this portion of the mammalian cranium has been presented to us in the preceding pages, while there are modifications in certain groups which are somewhat difficult of explanation, we shall find that the general laws which govern its morphology may be satisfactorily determined. These laws, concisely speaking, are, that the development of the arch as shown by the number of the bones, by the degree and the number of the curvatures, by its relation to the orbit and articulation of the mandible, as well as to other neighboring parts, and by the amount of surface presented for muscular insertion, all depend upon the energy and character of the masticatory muscles. That these in turn depend upon and are closely correlated with the habits and environment of the animal.

The above laws are very clearly exhibited in the Carnivora and in the

Ungulata. In the Perissodactyla the sagittal crest, ridges and extensive parietal surface are correlated with increased insertions of the temporal, while the large, strong and complicated arch has equal reference to a powerful masseter. So in the Artiodactyla, especially in the Ruminantia, the diminished surface for the temporal and the smaller, weaker arch both denote lessened energy in the above muscles, while the enlarged pterygoid muscular insertions show that the required action has been provided in another direction. As Prof. Cope has shown, Forms which move the lower jaw transversely have the temporal muscles inversely as the extent of the lateral excursions of the jaw. Hence these have a diminished size in such forms as the ruminants and are widely separated.

The singular fact that the Tylopoda alone of the selenodont Artiodactyla possess the sagittal crest is explained by Prof. Cope by the presence of canine teeth which are used as weapons of offense and defense and which demand large development of the temporal muscles.

The energy of the action of these muscles has reference to the position of the dental series. In the primitive Mammalia, as Cope shows, a considerable portion of the molar series is below and posterior to the vertical line of the orbit, and this condition has been preserved in the Rodentia and Proboscidia, forms which have the proal mastication. But in those which have lateral movements of the jaw the molar series has gradually moved forwards. The camel alone retains the primitive condition.

The bunodont Artiodactyla, as the Dicotylidæ, have the molar series posterior to the orbit; those with lateral movement of the jaw, the Suidæ, have them more anterior.

In the relation of the arch to the orbit it is obvious that the position of this last must exert its influence upon the strength of the arch. When the orbit is above or below the articulation a longer and consequently a weaker arch is demanded than when it is on a level with it. The same may be said when the orbit occupies an anterior rather than a posterior position upon the cranium. A comparison of the crania of the Tapiridæ with those of the Suidæ will corroborate this fact.

Then again the union of the bones by suture imparts a degree of elasticity to the arch which must serve to disperse over a given space the effects of shocks and blows which might under other circumstances prove injurious.

We have already noted the peculiar vertical curvature of the arch downwards in the Rodentia. This is a decided manifestation of weakness and is compensated in some of the families by the unusual arrangement made in the distribution of the muscular insertions of the masseter through the infraorbital opening, by which increased energy is imparted to the powers of mastication and whereby the action of the mandible is rendered equal to the demand upon its efforts.

Where this does not exist it is evident that the strength of the arch is still sufficient for the antero-posterior movement of the articulation so peculiar to the Rodentia and so characteristic of the act of gnawing. The ascending ramus of the mandible differs according to the food Elevated in the Leporidæ it is short in the Sciuridæ and still shorter in the Muridæ In the first the coronoid projects but slightly is near the condyle and far distant from the molar series while the angle is broad and well rounded

In the other two families the coronoid is feeble pointed and placed at equal distances between the condyle and the last molar thus the masseter does not possess a leverage as advantageous as in the Leporidæ This muscle, however in the rats has its maxillary attachments much developed, while few fibres spring from the arch

It has been implied that modifications of the arch are due to variation as brought about by the effects of increased Use and Disuse aided by the influences commonly attributed to Natural Selection To what extent these laws have been carried since the earliest records of mammalian life it would be useless to inquire as palæontology affords us little or no evidence They certainly cannot have escaped those which govern Heredity In the Carnivora for example the arch remains essentially the same as it did in the days of the Creodonta the ancestors of the cats and similar conditions undoubtedly apply to other groups so far as our scanty knowledge extends We must await farther developments for the solution of this as well as of other even more important problems

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A Matter of Priority

By Patterson DuBois

(Read before the American Philosophical Society April 5, 1895)

It is reported that at a meeting of the Royal Society held June 18, 1884 Mr J W Swan presented a number of specimens of leaves of gold of extreme thinness which had been prepared by the process of electro deposition Mr Swan s idea appears to have been to produce gold leaf by electro chemical instead of mechanical means The process is briefly described as follows

"The leaves were prepared by depositing a thin film of gold on a highly polished and extremely thin electro copper deposit The copper was then dissolved by perchloride of iron, leaving the gold in a very attenuated condition The leaves were approximately four millionths of an inch thick and some of them mounted on glass showed the transparency of gold very perfectly when a lighted lamp was looked at through them "

Within a few weeks past I myself, observed an item going the rounds of the public press in reference to this so called Swan process We have no right to say that the process described by Mr Swan is not entirely original with him It is proper however to call the attention of the American Philosophical Society to the following facts

At a meeting of this Society held February 16 1877 William E Du Bois, then Assayer of the United States Mint in this city and a member of this Society made a brief communication (*Proceedings* Vol xcix) on the production of gold films by a process such as Mr Swan has within a few months past through the Royal Society brought before the public The inventor of the process was Mr Alexander E Outerbridge Jr then an assistant in the Assay department of the Mint at Philadelphia and subsequently engaged in establishing and carrying on scientific laboratories at the Whitney Car Wheel Works and at the large establishment of William Sellers & Company both in this city

Apart from any future possibility of producing gold leaf by electro chemical instead of mechanical process Mr Outerbridge regarded his results as interesting in a purely scientific aspect The gold films produced at that time by him seem to have been much thinner than those which were recently shown at the Royal Society by Mr Swan Specimens were exhibited in the Philadelphia Mint as early as 1877 and some were obtained by several colleges and individuals One now in the possession of Dr George F Barker of this city is accompanied by the written account which Prof Barker received with it in 1878 This memorandum is as follows

Gold film obtained from a copper plate having 20 square inches surface

Weight before plating	84$\frac{470}{1000}$ grs
" Weight after plating	84$\frac{465}{1000}$ grs
Weight of gold	$\frac{5}{1000}$ gr

" Calculated thickness $\frac{1}{791005}$ of an inch 59½ times less than a single wave length of green light

This is mounted as a slide for a microscope and has a double fold I have also specimens in my own possession

In addition to the brief communication made by Mr W E DuBois to this Society in 1877 as aforesaid the *Journal of the Franklin Institute* (Vol ciii 284) gave an abstract of a lecture delivered by Mr Outerbridge before the Franklin Institute in 1877 At the stated meeting of the Institute held May 16 1877 Mr J B Knight then Secretary, referred in his monthly report to Mr Outerbridge s process in the following terms

"*Transparent Gold*—In the course of a lecture on gold delivered before the Franklin Institute on February 27th last Mr A E Outerbridge Jr of the Assay department of the Mint in this city, gave an account of some experiments he had made with the view of ascertaining how thin a film of gold was necessary to produce a fine gold color

The plan adopted was as follows From a sheet of copper rolled down to a thickness of $\frac{3}{100}$ of an inch he cut a strip 2½ by 4 inches This strip, containing 20 square inches of surface, after being carefully cleaned and burnished was weighed on a delicate assay balance Sufficient gold to produce a fine gold color was then deposited on it by means of the battery the strip was then dried without rubbing and reweighed and found to have gained $\frac{1}{10}$ of a grain thus showing that one grain of gold can by this method be made to cover 200 square inches as compared to 75 square inches by beating

By calculation based on the weight of a cubic inch of pure gold the thickness of the deposited film was ascertained to be $\frac{1}{980400}$ of an inch as against $\frac{1}{367650}$ for the beaten film

'An examination under the microscope showed the film to be continuous and not deposited in spots the whole surface presenting the appearance of pure gold

Not being satisfied however with this proof and desiring to examine the film by transmitted light Mr Outerbridge has since tried several methods for separating the film from the copper and the following one has proved entirely successful

' The gold plating was removed from one side of the copper strip and by immersing small pieces in weak nitric acid for several days the copper was entirely dissolved leaving the films of gold intact floating on the surface of the liquid These were collected on strips of glass to which they adhered on drying and the image of one of them is here projected on the screen by means of the gas microscope

You will observe that it is entirely continuous of the characteristic bright green color and very transparent as is shown by placing this slide of diatoms behind the film By changing the position of the instrument and throwing the image of the film on the screen by means of reflected light as is here done you will see its true gold color

' Mr Outerbridge has continued his experiments and by the same processes has succeeded in producing continuous films which he determined to be only the $\frac{1}{3791000}$ of an inch in thickness or 10 584 times thinner than an ordinary sheet of printing paper or sixty times less than a single undulation of green light The weight of gold covering twenty square inches is in this case [illegible] of a grain one grain being sufficient to cover nearly four square feet of copper '

In a lecture on Matter ' delivered at the International Electrical Exhibition (Philadelphia) October 9 1884 and subsequently printed in the *Journal of the Franklin Institute* September 1885 Mr Outerbridge himself made the following statement

' After a series of careful experiments I have obtained in this way sheets of gold mounted on glass plates, which are not more than $\frac{1}{10000}$ of a millimetre thick and I have some specimens to show you which I have good reason to believe are not more than $\frac{1}{100000}$ of a millimetre To give you an idea of this thickness or, rather thinness I may say that it is about $\frac{1}{50}$ part of a single wave length of light Such figures are not haphazard guesses but are based upon reliable and understandable data, and are easily susceptible of verification

'We cannot claim for the thinnest of these films that they represent a single layer of molecules Taking Sir William Thomson s estimate of the size of the final molecules and considering that each layer corresponds to one page of a book our thinnest film would then make a pamphlet having more than a hundred pages It is found that when such a film is interposed between the eye and any object it is as transparent as a piece of glass This may be readily proved by projecting a picture on the screen and interposing the leaf of gold in the path of the light and you see that the only apparent effect is to tinge the light a pale greenish color none of the detail of the picture is lost though all the light is coming through a piece of gold as absolutely continuous in its structure when examined under a microscope as though it were an inch thick By placing in the lantern a piece of ordinary gold leaf having a thickness of about $\frac{1}{300000}$ of an inch and a piece of electro plated gold leaf about $\frac{1}{1000000}$ of an inch thick mounted side by side on a glass slide and focusing their images on the screen you will see a very great difference in the amount of light transmitted by the two owing to the difference of thickness

One particularly interesting thing about the foregoing extract is that the lecture from which it was taken was bound in as a part of the literature relating to the exhibition and sent broadcast to exhibitors and others to whom Mr Swan s revelations ought therefore to come with no degree of novelty

The *Journal of the Franklin Institute* in its issue of September 1894 (Vol cxxxviii 825) refers to the Outerbridge and Swan processes in an article which concludes as follows

' It may be stated in conclusion that the mode of procedure above described was patented by its author [Alexander E Outerbridge Jr] under the title Manufacture of Metallic Leaf In his patent the inventor describes as a new and improved method of manufacturing gold leaf silver leaf and other metallic leaf the above named method of electrical deposition As suitable mediums to support his films he mentions copper in thin sheets, and paper shellac wax etc made conductive upon the surface which is to receive the deposit

For removing the deposited film from copper and paper Mr Outerbridge describes the use of a bath of dilute nitric acid or of perchloride of iron In the case of the shellac wax etc , alcohol benzine and other solvents are referred to

The patent granted to Mr Outerbridge is No 198 209 and is dated December 18 1877

The American Philosophical Society is presumably interested in questions of scientific priority especially when that priority is American and still further when it is Philadelphian As Mr Outerbridge and I worked side by side for twelve years as assistants in the Assay department of the Mint in this city I am glad to add my testimony towards the substantiation, if such were necessary of the facts herein mentioned As stated in the beginning Mr Swan s process notwithstanding its striking similarity to Mr Outerbridge s may be fairly original with Mr Swan but it was also original with Mr Outerbridge some seventeen years before Mr Swan appears to have made his achievement known

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The Protohistoric Ethnography of Western Asia

By Daniel G Brinton M D

(Read before the American Philosophical Society April 19 1895)

Many of the most weighty problems in ethnography and in the history of civilization depend for their solution on the relative positions of races and linguistic stocks in western Asia at the dawn of history The numerous special studies which have been devoted to the archæology of this region are abundantly justified by the importance of the results obtained and yet to be expected

It is my intention in this article to examine these studies with the aim of ascertaining what races and stocks occupied the area in question in protohistoric times and where lay the lines of demarcation between them It is possible that by bringing to bear upon the questions involved the general principles of ethnographic research some light may be thrown on points still obscure This I shall have in view when it appears applicable

The area to be considered is roughly that portion of Asia between the thirtieth and fortieth parallels of north latitude and west of the fiftieth meridian east of Greenwich It includes the whole of the Euphrates Tigris valley Syria, Asia Minor and Trans Caucasia

ALLEGED PREHISTORIC RACES

The assertion has been often made that there are indications of races in this area belonging to other varieties of the human family than those discovered there in the protohistoric period

These statements require to be examined as a preliminary to the study of the earliest historic peoples

1 *An Alleged Primitive Black Race (Dravidian or Negritic)*

The theory was advanced by Lenormant that lower Mesopotamia and southern Persia were once peopled by an ancient branch of the black skinned Dravidians of India This opinion has of late years been defended by De Quatrefages Oppert Lefèvre Schurtz Schiaparelli, Condor and others *

The only evidence which seems at all to support such a view is the presence in the Khanate of Kelat of the Brahu tribe who have been by some classed with the Dravidas or Mundas of India They are certainly negroid with swarthy complexions flat noses scanty beard hair black and curly cheek bones high and face broad Their language has undoubted Dravidian elements the words for "one" and "two" for example and many others But its grammar seems to me to be much more Aryan than Dravidian The verbal subject is a separable pronominal prefix, the nouns have declensions and the suffixes are no longer root words It is probable they are merely a hybridized outpost of the Dravidian stock † It is well to remember that they dwell on the affluents of the Indus, twelve hundred miles distant from the Euphrates, and there is no reason to suppose that they were ever nearer it

The undersized negritic population which is found in the Andaman and other islands south of the Asiatic continent has been supposed, principally on the strength of some discoveries of negroid heads and portraitures at Susa by M Dieulafoy, to have extended into Babylonia But these sculptures belong to a comparatively late period and if negritic—and their strong beards render such a supposition improbable—they are much more likely to have been of slaves or captives than of an old resident population ‡ This would also explain the somewhat negroid traits of the modern Susians

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* See De Quatrefages *The Pygmies* pp 55 56 (Eng trans N York 1895) Lefèvre *Race and Language* p 118 Schurtz *Katechismus der Volkerkunde* p 155 L. Schiaparelli Sull Etnografia della Persia antica anteriore alle invasione ariane in *Atti della R Accad delle Scienze di Torino* 1898 The last mentioned distinctly identifies the Brahu as the remnant of the primitive speech

† Synoptical Grammar and Vocabulary of the Brahoe Language in Bellew *Travels from the Indus to the Euphrates* There are only three numerals in the language 1 *asit* 2 *irat* 3 *musit* The others are borrowed from the Persian The first may be compared to the Sumerian *ash* one Mr R N Cust in his *Languages of the East Indies* is doubtful about the Dravidian relationship

‡ The theory that the beard and hair are artificial of course destroys ethnic value of any kind for these figures

The "Asiatic Ethiopians," mentioned by Herodotus and some other early Greek writers, were not negroid. They are described as having straight hair, and it has been shown by Georges Radet that some of them at least were Semites.*

2. *An Alleged Primitive Hamitic (Cushite) Race.*

By the "Hamitic" stock ethnographers and linguists now mean those who speak dialects of the Berber languages of northern Africa and their allied tongues, the Galla, Somali, Danakil, etc., of eastern Africa. The "Cush" of the ancient Egyptians was largely peopled by Hamites, and the oldest inhabitants of Egypt itself were probably of Hamitic blood.

The idea of locating members of this stock on west Asian soil was no doubt first derived from the book of Genesis.† That respected authority states that Nimrod, the son of Cush and grandson of Ham, settled in the plain of Shinar and built the first cities of Babylonia. This statement was eagerly adopted by the early Assyriologists, notably by Sir Henry and Prof. George Rawlinson, by Lepsius, Loftus and others. The language of old Babylon was even identified with the modern Galla, and the passage of the Hamites or Cushites across the Red Sea, by way of Arabia, to the Persian Gulf, was accurately traced!‡

Another band was supposed to have entered Palestine and to have left representatives in the light complexioned Amorites of the highlands.

It must be acknowledged that later researches have accumulated no evidence in favor of these ancient legends. Except in one or two possible instances in southern Arabia,* no example of a Hamitic dialect has been discovered in Asia, and Babylonian Semitic is as far from Galla as is ancient Arabic

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* See his extended discussion of the passages in the *Revue Archéologique*, Tome xxii (1893), p. 209 *sq.*

† The genealogical list of peoples in Genesis x is often appealed to in support of theories in ethnography. That list has much interest politically, geographically and even historically, but cannot at all be accepted on questions of ethnic affiliations. Schrader, Hommel and Delitzsch have expressed the opinion that the "Cush" of Gen. x, 8, etc., refers to the Kashites of the lower Tigris, who will be discussed later. Fried. Delitzsch, *Die Sprache der Kossäer*, p. 61, note.

‡ See Prof. Rawlinson in Smith's *Dict. of the Bible*, s. v. "Chaldeans;" and Sir Henry in the notes to his translation of Herodotus. W. K. Loftus, *Travels in Chaldæa and Susiana*, pp. 69, 70, 96. Lepsius' views are severely criticised by Dr. W. Max Müller in his erudite work *Asien und Europa nach altägyptischen Inschriften* (Leipzig, 1893), p. 343. The theory has recently been developed by M. Lombard in his "Description ethnographique de l'Asie Occidentale," in the *Bull. de la Soc. d'Anthropologie* of Paris, 1890, though his connotation of the term *chamitique* differs from that of Rawlinson.

Principally because they are said to have been blonds, Prof Sayce claims the Amorites as Libyans But there are blonds in considerable numbers among the pure blooded Arabs of the desert Therefore this trait is not conclusive Moreover, some of the ablest critics now believe that " Amorite " and " Canaanite " were merely ethnically synonymous terms applied to the same Semitic people † At any rate, the Amorites, if non Semitic, are much more likely to have been allied to the tribes north of them than to the African Libyans

3 *An Alleged " Turanian " (Sibiric or Sinitic) Race*

A favorite theory with many writers, notably Lenormant, Sayce, Conder, Isaac Taylor, etc , has been that the " Turanians " extended over western Asia and central and southern Europe in prehistoric times ‡

Who these Turanians were is not always clear Prof Sayce sometimes calls them " Ugro Altaic," at others, " Ugro Mongolian," by the former meaning collaterals of the Finns, Tartars and Turks (those whom I call Sibiric),§ and by the latter apparently including the Chinese

Apart from the alleged evidence from linguistic data, which I shall consider later, scarcely anything save assertions have been offered in favor of this opinion Before the historic invasions of western Asia by the Sibiric tribes, there is no record of their presence in Persia or west of it There are no remnants of a prehistoric occupation by them, no existing fragments of a primitive Sibiric tongue The only groups of Mongols now in the limits of ancient Iran, to wit , the Hasarah and the Aimak, between Herat and Cabul, and a few others, drifted there in the mighty inundation of Ghenghis Khan in the fourteenth century of our era.[*]

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* Notably the Ekhili or Mahri in the Hadramaut See M de Charency a study of this dialect in *Actes de la Société Philologique* T I p 31 *sqq* Dr Glaser has recently obtained more material but this has not yet been published

† The question is impartially stated in J F McCurdy *History Prophecy and the Monuments* Vol I pp 406–408 (New York 1894) Dr W Max Müller assigns strong reasons for considering the Amorites to have been pure Semites *Asien und Europa* pp 230-234

‡ The evidence in favor of this theory is fully summed up by C R Conder in his article The Early Races of Western Asia in the *Jour of the Anthropological Institute* 1890 p 304 *sq* and in his *Syrian Stone Lore* (London 1886)

§ See the classification of the Asian race which I adopt in my *Races and Peoples Lectures on the Science of Ethnography* p 194 (New York 1892)

According to their own traditions, and the concurrent testimony of the oldest Chinese annals, the present Khanates of Khiva, Bokhara and Khokan, as well as eastern Turkistan, were inhabited in the most ancient time by an Aryan population, which was conquered or expelled by the Mongol-Tartar race within the historic period [†]

This is substantiated by the most recent researches with reference to the ethnic position of the ancient Asian Scythians who are located in that vicinity by the Greek geographers. They are shown to have been members of the Indo-European family.[‡]

It is even very doubtful that in the remote Avestan period of the history of eastern Iran the Aryans had to contend with Altaic or Mongolic hordes; for their enemies are represented as using war chariots, which were unknown to the Tartar horsemen.[§] The so-called non-Aryans (*anarya*) probably were merely other tribes of Indo-European origin, of different culture and religion.[‖] The peculiar arrow release of the Mongolians and their characteristic bows are not depicted on the oldest monuments, nor were they familiar to the early western tribes of Asia.[¶]

Physically the protohistoric peoples of western Asia nowhere display clear traits of the well-marked type of the Sibiric stock. Judged either by the portraitures on the monuments or by the cranial remains in the oldest cemeteries, they were meso- or dolicho-cephalic, with straight eyes, oval or narrow faces, distinct nasal bridges, etc.

A persistent effort was made a few years ago by the Rev. C. J. Ball to prove that the language and blood of the southern

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[*] H. Schurtz, *Katechismus der Völkerkunde*, p 292

[†] W Geiger, *Civilization of the Eastern Iranians in Ancient Times*, p 18, Gregorjew, *Bulletin* of the Oriental Congress at St. Petersburg, 1876, p. 38

[‡] Bertin in *Jour of the Anthrop Inst*, 1888, p 109, Hovelacque, *La Linguistique*, p 190, and others

[§] W. Geiger, u. a., who inclines, however, to a pre-Aryan hypothesis.

[‖] Geiger points this out clearly, and it is surprising that Schrader and Jevons (*Prehistoric Antiquities of the Aryan People*, London, 1890) fail to note that *airya* in the Avesta is a religious, not an ethnic, distinction

[¶] See Prof E. S. Morse's suggestive study on arrow releases as an ethnic trait in *Essex Institute Bulletin*, 1885.

Babylonians were distinctly Chinese * His essays on this subject are striking examples of the misapplication of the principles of linguistic comparisons for ethnographic purposes By the methods he adopts any two languages whatever can be shown to be related He claims his view to be original but eighteen years before he published it the Rev Joseph Edkins had printed a volume to prove that the Chinese language had its origin in the Mesopotamian plain because the Tower of Babel stood there near which the confusion of tongues' took place ! †

Prof A Boltz has lately pushed the Sinitic theory to its extreme by discovering elements of Japanese in the tongues of old Babylonia

These opinions scarcely merit serious refutation the more so as the whole Turanian hypothesis has distinctly weakened of late years several of its warmest defenders having gone over to the "Alarodian' theory which I shall consider presently

4 *An Alleged Ground Race" of Unknown Affinities*

It will be sufficient to mention the notion advanced by Bertin that in prehistoric times western Asia was peopled by what he calls a ground race" a variety of the human species of no particular language or physical type which he imagines once spread over the whole earth and disappeared with the advance of the higher varieties ‡ No evidence is offered for the existence of this fanciful creation of a scientific brain

THE "STONE AGE' IN WESTERN ASIA

The absence of a prehistoric, aboriginal people, of a different variety from the white race, resident in western Asia, appears confirmed by archæological investigations

Up to the present time no sufficient proof of palæolithic sites within the area I am considering has been presented §

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* Ball's articles on the subject are in the *Proceedings of the Society of Biblical Archæology* 1889 and after

† Rev Joseph Edkin *China's Place in Philology* (London 1871)

‡ G Bertin The Races of the Babylonian Empire in the *Jour of the Anthrop Soc* 1888 p 101 *sq*

§ G de Mortillet in his *Préhistorique Antiquité de l'Homme* pp 1 8, 288 450 presents statements to the contrary But the day is past when we assign a rough stone implement of chelléen form at once to palæolithic times The stratigraphy is the test and this has not been shown to justify such antiquity in Syrian caves

Prof. Hilprecht, of the Nippur expedition, brought from the Lebanon range a collection of roughly chipped stones; but I am convinced, after examining them carefully, that they are not completed implements, but quarry rejects, such as have often been mistaken for palæoliths, or else undeveloped forms.

In the oldest strata of Hissarlik no signs of a rough stone age were discovered.* In the caves of the Lebanon range examined by Lartet the oldest remains of man's industry in stone were associated with pottery and the bones of living species of animals.† Later cave exploration, when properly conducted, has everywhere in western Asia repeated this story. Only when the strata have been manifestly mixed by nature or man have stone implements been found in juxtaposition to the bones of extinct species.

In none of these deposits have human remains been exhumed presenting the low and presumably very ancient types of the neanderthaloid man or the pithecanthropus.

The megalithic monuments, the dolmens and menhirs of Syria and Palestine, also contain pottery and belong distinctly to the polished stone period, if not to that of early metals. They have been attributed to some prehistoric non-Semitic people; but the fact that Palgrave and Dr. d'Elyseff found just such monuments in Arabia removes the foundation for such an assertion, and assigns them to early Semitic hordes.‡

This is consistent with the Egyptian portraitures, which represent all the inhabitants of Syria (except the Hittites) with pure Semitic features.§

The conclusion from the above facts is that from the testimony so far presented, western Asia, instead of being the birthplace of the human species, as has generally been supposed, was in fact comparatively lately occupied by man.

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* *Verhandl. der Berliner Anthrop. Gesell.*, Bd. xi, s. 2.

† Lartet, *Voyage d'Exploration à la Mer Morte*, pp. 215 *sqq.* The latest scientific explorer of the caves of Palestine is Dr. Alexandre d'Elyseff. His full text has not yet appeared, but an abstract was published in the *Bull. de la Soc. d'Anthropologie*, Paris, 1884, p. 217.

‡ Lartet, *Exploration*, etc., p. 238. He gives interesting sketches of a number of these monuments. They were doubtless sepulchral. Hoernes refers them to the earliest age of metals (*Die Urgeschichte des Menschen*, p. 402 (Vienna, 1892)). Dr. d'Elyseff (*ubi supra*) assigns those in northern Arabia to the neolithic period. Their builders knew the ass and camel, but were anthropophagous.

§ W. Max Müller, *Asien und Europa nach altägyptischen Inschriften*, p. 229.

MEMBERS OF THE WHITE RACE THE EARLIEST KNOWN OCCUPANTS

Excluding for the reasons above given the various alleged prehistoric races named, we are justified in saying that western Asia at the dawn of history was under the exclusive control and substantially wholly populated by the white race

This race is that to which Blumenbach erroneously applied the name ' Caucasian," by which it is still familiarly known It is distinctively the "European" in contrast with the Asian (Mongolian, yellow) and the African (Negro or black) sub species I have, however, assigned it the more correct name Eurafrican " as its primitive home included northwest Africa as well as western Europe *

In western Asia it was represented from the remotest historic times, as it is to day by branches of its three great linguistic stocks the Aryan or Indo Germanic (North Mediterranean), the Semitic (South Mediterranean) and the Caucasic In a general way, the Caucasic tribes are and always have been in the north, the Aryans in the centre and the Semites in the south The tribes which cannot positively be assigned to one or other of these stocks I shall consider later

LINES OF IMMIGRATION

There was a time when the doctrine was general that the white race originated in central Asia and moved westwardly into Europe and Africa

Cogent reasons have of late led to a reversal of this opinion The white race, as such, most probably had its 'area of characterization" † in western Europe and the Atlas region (then united by a land bridge), and moved eastwardly in two great streams, the Hamitic and Semitic branches journeying south of the Mediterranean, the Aryan and Caucasic north of it

For a very long period the proto Semites resided in Arabia, developing there the special traits of their languages, their ethnic character, and to some extent their early culture Later they spread over Syria and Mesopotamia, advancing in both

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* See my *Races and Peoples* p 108 *sqq* for the subdivisions of the white race

† I adopt this excellent expression from M de Quatrefages and have explained it in my *Races and Peoples* p 94

directions until checked by the North Mediterranean immigrants *

The Aryans entered Asia chiefly by the Hellespont and Bosphorus They traversed Asia Minor into Iran, where the lofty chain of the Hindu Kush turned one current to the north to Bactriana, another to the south to Afghanistan and India †

The Caucasic tribes may possibly have compassed the Black Sea, and thus have reached their mountain homes, but the evidence, both linguistic and archæologic, is that they preceded the Aryans along the same route into Asia Minor, and originally occupied localities well to the south of their present position The indications are that they did not reach the Caucasus until late in the neolithic period, or about the beginning of the Age of Iron, and then as refugees, driven from more favored climes to the south and southeast, and bringing with them elements of the characteristic cultures of those regions ‡

We cannot suppose a movement in the reverse direction, for, as M Chantre well remarks "History does not furnish a single example of a nation which has left the Caucasus to spread itself in the plains near it or in remoter regions' The mountain fastnesses were refuges, not centres of dispersion § The most prolonged researches in the caves of the Caucasus and in the drift of its rivers have brought to light no evidence of a really ancient occupation, no traces of an "old stone" or palæolithic condition of culture ‖

ANTIQUITY OF THE IMMIGRATION

While the general movement above outlined has been recognized by various writers, its antiquity has been surely underestimated

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* See an article by me The Cradle of the Semites read before the Oriental Club of Philadelphia and published with a paper on the same subject by Dr Morris Jastrow Jr Philadelphia 1890

† See the suggestive study of M G Capus Les Migrations Ethniques en Asie Centrale au point de vue Geographique in *L Anthropologie* 1894 p 53 *sqq*

‡ This is the result of a careful comparison of the oldest artefacts from the necropoles of Trans Caucasia See F Heger in *Verhand Berliner Anthr p Ges* 1891 p 4 4 M E Chantre believes the connection was with Assyrian culture and an equal authority M de Morgan that it was with Iranian (Morgan *Mission Scientifique au Caucase* Paris 1889)

§ In the *Cong Internat d Archéologie Préhistorique* Moscow 1892 Tome i p 173 This illustrates how erroneous was the notion of Blumenbach that the Caucasus was the cradle of his so called Caucasian *i e* European white race

‖ Chantre *u s* Tome ii p 83 *sqq* Compare also the article of F Bayern Ueber die ältesten Graber in Kaukasien Sup to *Zeitschrift fur Ethnologie* 1885 and the recent researches of Rösler and Belck in the *Verhand Berliner Anthr p Ges* 1891 pp 213 *sqq*

When we calculate the age of culture in Mesopotamia and Syria and especially the time required to develop the extensive changes in the languages and dialects of all three stocks it is safe to say that the appearance on Asian soil of the northern and southern streams could not have been later than ten or twelve thousand years B C We need fully this much elbow room to account for the changes physical cultural and linguistic in the stocks themselves and by taking it many difficulties will be avoided *

Late researches tend strongly in this direction It has been shown that the Georgian dialect of the Caucasic stock has changed almost nothing in grammar or vocabulary in a thousand years † the age of the *Gathas*, the oldest songs of the Avesta, has been carried back far beyond the former computations ‡ and in spite of vigorous opposition the opinion is gaining ground that the more ancient portions of the Rig Veda must be assigned to a period about four thousand years B C § City building nations lived on the Euphrates six thousand years before our era as is indicated by the alluvial deposits ‖ And other evidence to the same effect is constantly accumulating from various directions

No position could be more untenable than that recently maintained by Col A Billerbeck that the Aryans entered Asia about the thirteenth century B C coming from the north around the Caucasus (!)¶ into western Asia and did not become the leading race in Persia until about 800 B C a land which he believes was before that date inhabited by a "Mongolian" population Such views are directly against the evidence The light which has been thrown on the culture of the Indo Iranians anterior to that remote period when they separated by the linguistic researches of Schrader, show that even then they had domesticated those thoroughly Asiatic animals, the camel and the ass, and had lived long enough in their Asian home to develop many local culture words, which each branch preserved after their division.* Years ago the acute student of antiquity, Vivien de St. Martin, pointed out that throughout the Avesta there is not an instance of a word, proper name or culture reference which distinctly indicates association with any Turanian or Dravidian nationality.† This significant statement has borne the test of criticism, and is well nigh conclusive in its bearing on the question at issue.

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* As that advanced by Schiaparelli that we cannot suppose Iran to have been uninhabited when powerful and [illegible] nations dwelt on the Indus and the Euphrates There is no reason why it may not have been peopled by Aryans as early as these localities were by Dravidians and Semites Cf Schiaparelli [illegible] 810

† See the admirable work of R von Erckert *Die Sprachen des Kaukasischen Stammes* pp 298 300 (Vienna 1895)

‡ W Geiger *[illegible]* Introduction

§ I refer to the arguments of Prof Jacobi of Bonn and the Hindu Bal G Tilak For a very needed criticism of these by Prof Whitney see *Proceedings of the Amer Oriental Society* March 1894 p lxxxii

‖ Dr J F Peters in *Science* March 8 1895

¶ Von Norden um den Kaukasus herum nach West Asien Billerbeck *Susa* p 63

We may now proceed to scrutinize more closely each of the three great divisions of the white race who dwelt in western Asia in prehistoric and protohistoric times.

The first to arrive, as I have intimated, I take to have been

THE CAUCASIC STOCK.

The clear definition of this stock is one of the most recent conquests of anthropologic science, and is due chiefly to the untiring studies of Gen. R. von Erckert, of the Russian army.‡ He has proved the fundamental unity of the three great groups of the Caucasic languages, the Georgian, the Circassian and the Lesghian. In these groups there are about thirty dialects or languages, and they have not yet been sufficiently analyzed to decide which is nearest to the original tongue, the common *Ursprache*.

The morphology of the stock is strictly its own, severing it as widely from the Ural-Altaic tongues as from those of Aryan or Semitic complexion. It is an entirely independent linguistic family.

The Georgian is the southernmost group, being spoken in Trans-Caucasia about Tiflis. It is divided into several branches, which are scarcely more than dialects, the Grusinian, the Imerian, the Mingrelian, the Lasian and the Svanian. The structure of these is not agglutinative in the proper sense of the word

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* Schrader and Jevons, *Prehistoric Antiquities of the Aryan Peoples*, p. 267, etc. (London, 1890).

† *Géographie du Véda*, Paris, 1859, etc., quoted by E. Schiaparelli in his article already quoted, Sull' Etnografia della Persia antica anteriore alle invasione ariane.

‡ *Die Sprachen des Kaukasischen Stammes* (Vienna, 1895). The grouping of the Caucasic languages is not yet settled. Erckert inclines to a provisional geographical one.

They abound both in prefixes and suffixes, but these are not, or are rarely, independent themes The same affix may be used either as a prefix or a suffix The verbs have a direct conjugation in which the theme is verbal and another in which it is nominal (e g, 'I see it' and 'the seeing it is to me") *

The physical type of the Caucasic stock is that of the pure white race the brunette variety The modern skulls are broad (brachycephalic) but those from the most ancient cemeteries are much less so proving that a change has taken place in this respect during historic times † The stature is slightly above the European average The hair is dark and wavy, beard abundant, eyes straight and dark, nose prominent Handsome men are frequent, and the beauty of the women is famous the world over

In the opinion of M Chantre—an archæologist who has most thoroughly investigated the subject—the Georgians have resided in their present territory at least since 2000 B C ‡ This is corroborated by the development of their dialects Their own legends, which trace their ancestry back to Kartvel, fourth in descent from Noah are worthless §

Whenever it was that they reached Trans Caucasia, they certainly brought with them an advanced culture The oldest cemeteries belong to the dawn of the Iron Age (the Hallstatt epoch), a few burial mounds may date back to the Copper Age, but none are in the exclusively Stone Age ‖ This proves, as already suggested, that their earlier development was in another clime, in some more southerly latitude, where they were in contact with an older civilization, which must have been either Aryan or Semitic

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* Fr Müller *Grundriss der Sprachwissenschaft* Bd iii Abth 1 s 210 *sq*

† Dr R Virchow *Verhandl Berl Anthrop Ges* Bd xiv s 474 480 In the necropolis of Samthavro two-thirds of the oldest skulls are dolichocephalous The modern Georgians have an index of about 84° Many of the old skulls average as low as 73° See on this Dr Zaborowski in *Bull de la Soc d'Anthropologie de Paris* 1894 p 43 This change in cranial form is doubtless owing in part to intermarriage with brachycephalous stocks, but partly also to persistent antero posterior deformation finally exerting hereditary influence

‡ See his article Origine et Ancienneté du premier Age du Fer au Caucase in the *Mém de la Soc d'Anthropologie de Lyons* 1892 and in the reports of the International Congress of Prehistoric Archæology at Moscow 1892 De Morgan refers the older tombs of Armenia and Trans Caucasia to a period 2500 3000 B C (*Mission Scientifique au Caucase* p 208)

§ They are epitomised in N F Rittich s *Die Ethnographie Russlands* p 2

‖ Dr Virchow *ubi sup* p 482

Their immediate neighbors on the south were the inhabitants of the basin of Lake Van These were the "Urartu" of the Assyrian texts, the "Alarodi" of Herodotus, dwelling near the Ararat of the Hebrew Scriptures. They spoke a non-Semitic language, which by Sayce, Lehmann, Hommel and others has been classed with the Georgian This is probable, although it was certainly more or less Aryanized when we first become acquainted with it (about 800 B C.) * The native name of the land was *Biaina*, and of the people, *Chaldi*, after their chief god Chaldis. From this they are designated in ancient geography as the "Pontic Chaldeans," to distinguish them from those in Babylonia (the *Kash du*) A sharp culture line, however, divides these Chaldi from the Georgians. Their mode of burial was quite different, and their proper names cannot be analyzed from the Grusinian lexicon. This line crosses the river Araxes above Ordubad, and is easily traced by the existing remains †

Another people claimed, with some show of reason, to have belonged to this family were the Mitani, who occupied the great bend of the Euphrates about 37° N Lat ‡ Certain proper names of divinities and affixes are common to them and to the old Vannic language. The name Mitani itself sounds Georgian, as in that tongue *-ani* or *-iani* is an adjectival suffix (*okhro*, gold; *okhrani*, golden).

Bold attempts have been made to trace the Georgian into Europe.

It has been pointed out that Strabo mentions the Iberians and Albanians as tribes dwelling in Trans-Caucasia; and this is enough to have induced Prof. Hommel to claim that the Grusinian is related to the Albanian of ancient Illyria and to the Basque of the Pyrenees § As the former is a well-marked

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* "Stark indogermanisirt," as Hommel says His articles in point will be found in the *Archiv fur Anthropologie*, Bd xix, s. 251, *sq*, and the *Zeitschrift fur Keilschriftforschung*, Bd 1, s. 162, *sq* In the latter he says that the old Armenian, the Cossæan and the Suso-Medic belonged "zweifellos" to the Georgian family Heinrich Winkler considers the affinity of the Vannic to the Georgian is "shown to be highly probable" (*Ural-Altaische Volker und Sprachen*, p 145).

† See an excellent article by Waldemar Belck in the *Verhand der Berliner Anthrop Ges*, 1893, s 81, *sq* Bertin (*Gram of the Langs. of the Cuneiform Inscrips*) gives three Vannic numerals 1, *shushi*, 2, *tara*, 3, *shushi*. These are rather similar to the Caucasic 1, *eshku* 2, *heri*, 3, *shahi*

‡ Among others, Dr Lehmann supports this opinion, *Zeitschrift fur Ethnologie*, 1892, s. 180 (though with some hesitation) Compare his *Shamashshumukin*, s 68. Others connect the Mitani with the "Hittite" tongue. To this I shall refer later

§ *Archiv für Anthropologie*, Bd. xix, s. 251.

Aryan language and the latter one whose morphology is widely different from members of the Caucasic stock, the suggestion scarcely merits serious reception. The Etruscan, which has, of course, been thought of in this connection, presents no points of positive affinity. Possibly if we knew something of the Ligurian or the pre-Italic dialects, we might discover a connection. The Caucasic physical type is certainly that of the south of Europe, rather than of the north.*

THE ARYAN STOCK.

I take it as sufficiently demonstrated that the Aryan cradle-land was in western Europe. Evidence of all kinds is constantly accumulating in favor of this opinion, and I need not rehearse it here.†

In spite, however, of the indisputable relationship of the Aryan tongues, the branches of the stock do now, and apparently always have, presented several distinct physical varieties. Prof. Kollmann has claimed that there were at least four of these in prehistoric Europe.‡ Two certainly cannot be questioned. There is the blonde type, with medium or long heads, orthognathic, with fair or ruddy complexions, hair wavy and brown, red or flaxen in hue, eyes blue, gray or brown, stature tall, nose narrow and prominent, beard abundant. Such in Europe are the Scandinavians and Scotch Highlanders, and in Asia such are the Galchas and neighboring tribes, pure blooded Iranians in the secluded valleys of the upper Oxus.§ The modern Persians, in spite of admixture, partake of it largely, and hence the name of contempt which the Turcomans apply to them, *Guzl bash*—"red heads."

Another European type is that of the dark Celts. They are brunettes of short stature, with round, high heads, black eyes and hair somewhat prognathic; beard rather scanty. In proto-historic times they extended through central Europe from the Pyrenees to the Bosphorus, and included the Rhætians, Croatians, Roumanians and Dacians. The modern Auvergnats and Savoyards retain the type in its greatest purity.*

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* The able archæologist M. De Morgan confuses his readers by calling the Caucasians Turanians — "Les Touraniens ou blanches allophyles." He means by these the members of what I call the Caucasic branch of the white race, and the map which he gives "Carte de l'Asie Antérieure pour l'Époque Assyrienne," in which he marks the southern limit of the Caucasic stock by a line drawn from the mouth of the Araxes to the Amanus mountains is, I am persuaded, quite accurate. The differences between us are in phraseology only. See his *Mission Scientifique au Caucase*, pp. 117, 202, etc.

† See my *Races and Peoples*, p. 109 sq., for a condensed statement of the argument.

‡ See his article "Les races humaines de l'Europe et la question arienne," in the *Proceedings of the Congress of Prehistoric Archæology*, Moscow, 189

§ Wm. Geiger, *Civilization of the Eastern Iranians*, p. 8.

The Aryan languages are pre-eminently inflectional. The proto-historic members of the family in Asia were the Hellenic, the Armenian, the Iranian and the Indian (Sanscrit) groups. To these, which have been recognized by all, I would add the Celtic. All are characterized by suffix inflections, where the augment is not a separate word, but can be used only as a grammatical adjunct to the theme.

But it is of prime ethnographic importance to note that this represents a comparatively late stage in the growth of language. Prof. Brugmann pertinently remarks: "The first foundations of inflections were laid by the fusion of independent elements. We have to presuppose a period in which suffixal elements were not yet attached to words." †

It is possible that some of the Aryan tribes at the period of their arrival in Asia still retained a condition of the common tongue in which the suffixes were loosely attached to the stem and preserved their independence as words. An Aryan language in this stage might easily be mistaken for one which is agglutinative.

THE SEMITIC STOCK.

As I have already said, the "area of characterization" of the Semitic stock is now generally admitted to have been in Arabia.

When its members began to expand from that centre towards the east and north, the configuration of the land dictated the course they had to pursue. The arid surfaces of the Arabian and Syrian deserts lay between them and the fertile Mesopotamian depression. They were obliged to follow the coast of the Mediterranean and the vales of the Syrian mountains near it for the distance of five or six degrees of latitude northward, before they could turn to the east and reach the "Stream land" (Naharin) watered by the Orontes and the upper Euphrates (about 36° N. Lat.).

[*] Hovelacque et Hervé, *Précis d'Anthropologie*, p. [illegible] sq.

[†] Karl Brugmann, *Comparative Grammar of the Indo-Germanic Languages*, Vol. I, pp. 11-16.

It would be rash to set a specific date, even in millenniums for this movement But it is safe to say that Syria was reached earlier by the north Mediterranean influx than by the Semites The dialects and languages of the latter stock are more compact and they contain more culture words in common than those of either the Caucasic or Aryan families*—facts which indicate longer association in their early homes It is not likely however that the two streams first came into contact at any later date than 7000 B C

The Semitic languages are also inflectional but by a method so unlike that of the Aryan tongues that we cannot imagine any prolonged contact in the formative stages of their structure Instead of suffix building first by the attachment of independent words and later by formative particles the Semitic dialects have triliteral radicals which they inflect by internal vowel changes

The physical traits of the Semites are marked and durable The head form is long (dolichocephalic) and the face orthognathic The complexion hair and eyes are usually dark but in about ten per cent of the stock even where purest as in Arabia the complexion is blonde or reddish with hair and eyes to correspond The beard is abundant and both it and the hair are curlier than in the Aryan The nose is large fleshy and so peculiarly curved that it has been singled out as the most characteristic feature of the race It is shown on the oldest Egyptian and Babylonian representations as clearly as it is seen to day

The northernmost extension of the Semites was defined on the west by the range of the Amanus mountains just south of the Bay of Iskanderun (N lat 36 30′)† Between these and the Euphrates it is not likely that they permanently extended beyond 37° north latitude East of that river the range of the Masius mountains about latitude 36° north was their northern limit In very early times they had probably gained control of

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*The oldest forms of Semitic speech remarks McCurdy can be proved by the vocables common to them all to have been the idiom of a people already well furnished with the rudimentary appliances of civilization *History* etc Vol 1 p 188

†This is the opinion of Dr W Max Müller *Asien und Europa*, etc p 340 and is supported by a general agreement But the date assigned by that writer for the entrance of the Arameans into northern Syria—1500 B C —seems quite too recent in view of the other elements in the case (*Asien u Europ* p 88 234)

the valley of the Tigris and its affluent the upper Zab nearly to the 37th parallel of north latitude and southward to its mouth This was, and has ever been their easternmost ethnic limit The mighty wall of the Zagros mountains which is described by travelers to look like an enormous buttress rising from the river plain to uphold the tableland of Persia * and which extends with little interruption under various names in a south easterly direction from the 38th to the 30th parallel, checked their further advance

While the broad outlines of the locations of these stocks in western Asia are clear enough there were a number of small nations near the border lines about whom much doubt still obtains Some writers claim that they did not belong even to the European or White race but to another branch of the species

In examining them I shall begin with

THE PROTO BABYLONIANS †

The region near the mouths of the Tigris and the Euphrates (at that time emptying separately into the Persian Gulf) was occupied six thousand years ago by the Sumerians and Accadians on the west the Elamites and Ansanians on the east the Kashites adjoining the latter to the northwest and the Proto Medes, adjacent to these in the eastern highlands

What we know of the relationship of these tribes has been derived from a comparison of the remnants of their languages, and that this has not led to positive results will be clear from the following comparison of opinions

1 The Sumerians, Elamites, Kashites and Proto Medes spoke dialects of one language, probably related to the Alarodian or Georgian stock (Hommel Jensen, Billerbeck) ‡

2 The Elamites, Kashites and Proto Medes were of one speech, while the Sumerians belonged to a totally different stock (Eb Schrader, Weisbach, McCurdy) §

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* Bellew *From the Indus to the Euphrates* p 7 The observations of this author on the disposition of the mountain chains of Persia as deserting the lines of early migration and acting as barriers in some instances are well worth study

† For valuable suggestions and references in this part of my subject I am under obligations to Profs H V Hilprecht and Morris Jastrow Jr of the University of Pennsylvania

‡ Hommel *Zeitschrift für Keilschriftforschung* Bd 1 s 161 330 Billerbeck *Susa* s 26 Jensen *Zeitschrift für Assyriologie* 1891

§ Schrader " Zur Frage nach dem Ursprunge der altbabylonischen Cultur in the *Abh K P Akad* Berlin 1884 Weisbach, *Die Achameniden Inschriften zweiter Art* (Leipzig 1890)

3 The Elamites, Proto Medes and Ansanians were of one tongue The Sumerian was totally distinct as was the Kashite, the latter possibly having Aryan affinities (Hilprecht) *

4 The Kashite (to be distinguished from the Cossæan) was Semitic, as was the Accadian The Sumerian was an independent stock (Lehmann) †

5 The Kashite identical with the Cossæan was nowise related to either Semitic Sumerian Elamitic or Medic (Delitzsch) ‡

THE "SUMERIAN" QUESTION

In striking contrast to the above opinions Prof Joseph Halévy of Paris has for twenty years contended that there never was a Sumerian language and that all which has been written about it is a tissue of errors The natives of Sumer, he maintains were pure Semites §

This opinion claims the more attention as these alleged Sumerians according to various eminent scholars, were the fathers of the Babylonian culture the creators therefore of perhaps the oldest civilization of the world Consequently, the utmost interest attaches to their ethnic position

Prof Sayce has recorded himself in these strong terms "The science the art and the literature of Babylonia had been the work of an early people and from them it (*sic*) had all been borrowed by the later Semitic settlers of the country " ‖ In a similar strain Schrader asserts that the Sumerians were the founders of Babylonian culture, and that whatever else they might have been they were positively *not* Semitic ¶ and Paul Haupt has emphatically stated that to this certainly non Semitic people the whole culture of western Asia must be traced " **

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* Prof Hilprecht acknowledges however that the Kashitic and Elamitic proper names have much in common *Assyriaca* p 95

† Lehmann adds further and needless confusion to the question by applying the term Accadian to the Semitic language of Babylon and confining the Kashites to the Semitic inhabitants of Elam See his *Shamashshamukin König von Babylonien* pp 57 100 etc (Leipzig 1892)

‡ Delitzsch *Die Sprache der Kossäer* Leipzig 1884

§ Of the numerous articles of Halévy it will be sufficient to refer to his Aperçu grammatical de l Allographie Assyro Babylonienne in the *Proceedings of the Sixth International Congress of Orientalists* He there sets forth with entire clearness the method he advocates

‖ *Introduction to the Science of Language* Vol 1 p 8

¶ Schrader *Zur Frage* etc p 49

** Haupt Die Sumerisch Akkadische Sprache in the *Fifth Internat Orient Cong* p 249 This distinguished Assyriologist informs me that he has not changed his opinions in this respect

Halévy's point is that what has been supposed to be Sumerian epigraphy is nothing more than another method of writing Babylonian Semitic, an 'allography" or a secret writing, a "cryptography" used by the priests. The Sumerian graphic method was chiefly ideographic, or when phonetic, it was rebus writing similar to that which is found so well marked in America and which I have named "ikonomatic" writing.[*]

His explanations, which I cannot enter upon further, are extremely plausible, and evidently have been making headway of recent years. Distinguished Assyriologists such as Stanislas Guyard and Fr. Delitzsch[†] have publicly announced their acceptance of them. Careful historians such as McCurdy have been convinced they are right.[‡]

The reasons are obvious. More and more Semitic elements are recognized in the alleged "Sumerian," until one of the sincere believers in it, Dr. Heinrich Zimmern, has expressed his doubt that there is a single 'pure' inscription in the tongue;[§] and another, Dr. Hugo Winkler, avers that it was already a dead language long before King Gudea's time, and none of the scribes could write it correctly.[||] If this be so, how can anything like a correct grammar be extracted out of their blunders?

Other adversaries of the Sumerian doctrine have pointed out the theory of such an early people overpowered by a foreign population, which absorbed its culture while preserving intact its own tongue, is, as the eminent Assyriologist Mr. George Smith, long ago said, "without a parallel in the history of the world."[¶] In every recorded instance when a tribe has conquered another of higher culture and adopted its civilization, the language of the conquered appears in that of the conqueror in numerous loan words borrowed to express the new ideas obtained; but, with few and doubtful exceptions, nothing of the kind appears in Babylonian Semitic * What is not less significant, the inscriptions themselves are entirely silent about any such conquest †

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[*] See my *Essays of an Americanist*, p. 213, and *Primer of Mayan Hieroglyphics*, p. 13.

[†] Delitzsch gives his reasons in detail in his *Assyrische Grammatik*, pp. 61-65 (Berlin, 1889).

[‡] *History, Prophecy and the Monuments*, New York, 1894.

[§] Zimmern, *Babylonische Busspsalmen*, p. 7 (Leipzig, 1885). He asserts that such a graphic method as the Sumerian could not have arisen in a Semitic tongue.

[||] Winkler, *Geschichte Babyloniens und Assyriens*, p. 53 (Leipzig, 1892). Gudea may be placed at the most recent date about [illegible]0 B. C. Prof. Sayce is more cautious. He says: "The Accadian (*i. e.*, Sumerian) had ceased to be spoken before the seventeenth century B. C." *Introd. to the Science of Language*, Chap. I.

[¶] *Assyrian Discoveries*, p. 449 (New York, 1875).

Furthermore, professional comparative linguists have been nonplussed at the strange features of the alleged Sumerian Its friends at first wished to class it with the Turanian " especially the Ural Altaic languages The ' Finno Tartar ' was a favorite group But specialists in the Ural Altaic tongues unanimously declared that any such connection was an " absolute impossibility ‡ Then recourse was had to the " Alarodian and the Dravidian but with no better success So that finally the conclusion they were driven to was that it was an independent stock by itself without affinity like the Basque or, perhaps, the Etruscan

There is nothing impossible in this Historically such isolated examples are numerous But the difficulty lies in the alleged forms of the language themselves They seem so uncouth as to cast doubts on the whole theory One word will have more than fifty different meanings assigned it, the system of affixes is most capricious, its supposed system of " vocalic harmony " is unexampled in any other tongue, it omits a number of sounds absent also in Semitic—a suspicious coincidence, and so many disparities in its grammar have to be explained away by assertions of " impure " and " dialectic ' texts that the whole assumes an air of uncertainty §

In view of such difficulties the question is urged, Are not the supposed affixes merely the phonetic determinatives of ideograms, which are themselves used sometimes for their ideographic, sometimes for their ikonomatic values, just as we find them in the Mayan hieroglyphs of Central America? Or, if there is a *fond* which is non Semitic in the Sumerian (a likely enough supposition), do not the above facts show that it is im possible in the avowedly corrupt condition of the inscriptions to construct a sane grammar from such *disjecta membra*?

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* A supposed instance is *egal* palace literally great house (*e* house, *gal* great in Sumerian) But may not the few expressions of this kind as well as the names of gods Nergal Anu etc merely be borrowings from neighbors?

† Smith *ubi suprà*

‡ Prof Donner of Helsingfors has shown that no connection can exist between the Sumerian and any of the five stocks of the Ural Altaic languages See *Proc Fifth International Orient Cong* A not less competent authority Dr Heinrich Winkler says that it is absolut unmöglich *Ural Altäische Völker und Sprachen* p 169

§ Delitzsch *Assyrische Grammatik ubi suprà*

A careful study of the human faces on the oldest Babylonian monuments seems to tend strongly in favor of the Semitic theory. In the excavations at Tello and Niffer we have well drawn portraits of the people who lived on the Sumerian plain six thousand years ago. To my own eye they belong wholly to the white race and frequently unmistakably to its Semitic branch. This also is the conviction of so eminent an ethnographer as Fr. Ratzel. In his discussion of the subject he writes:

All of them, even the common people, the captives and the eunuchs, present the Semitic traits. Not one in the most remote degree approaches the Turanian type.* All the professed physical anthropologists who have examined the ancient portraitures without prejudice have arrived at this same conclusion.

Even if there was a Sumerian language related or not to the Susic, it by no means follows that those who spoke it were the authors of the ancient culture. On the contrary there is evidence the other way. The primal centre of progress was not in Sumer, not among the littoral people of the Gulf, but up the river far inland. As McCurdy observes: We can have no hesitation in vindicating for the region north of Babylon the claim put forth in Genesis that the seat of the earliest civilization was the place of the parting of the rivers.†

A curious bit of linguistic evidence illustrates this. The earliest Babylonians knew no metal but copper, and used it only for ornaments. When they first became acquainted with pearls and adopted them as ornaments they called them "fish copper," *i. e.*, ornaments from fishes. This shows that they were an inland people.‡

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* Friedrich Ratzel, *Völkerkunde*, Bd. iii, s. 739 (Leipzig, 1888). Lehmann, on the other hand, cannot see anything Semitic in the faces from Tello (*Šamaššumukin*, p. 1). It is enough to say that they have full, strong beards, abundant curly hair, nose prominent and curved, the bridge raised, eyes straight, skull symmetrical and arched, in order to satisfy any somatologist.

† *History, Prophecy and the Monuments*, Vol. i, p. 124. S. Reinach, a most competent authority, declares that the most ancient Babylonian art "n'est pas égyptisant," but arose independently. *Revue Archéologique*, 1893, p. 104.

‡ Haupt, in his article "Wo lag das Paradies?" in *Ueber Land und Meer*, 18 . The copper from Tello is entirely pure, without a trace of tin. It doubtless came, as Virchow maintains, from deposits of this character in Trans-Caucasia. *Verhand. der Berliner Anthrop. Ges.*, Bd. xix, p. 336.

According to Lehmann, however, the people at the parting of the rivers, the Akkads, were Semitic,* and Zimmern, who believes them Sumerians, acknowledges that they spoke a "younger," i. e., more Semitized dialect.† This seems to intimate that if there was a Sumerian people, its culture was learned from an earlier inland Semitic nation, and not the reverse, as Sayce and others above quoted have maintained. This supposition, it appears to me, would explain away more of the difficulties in the case than any theory yet offered, and I do not remember that it has heretofore been suggested.

THE ELAMITES, KASHITES, ANSANIANS AND PROTO-MEDES.

As will be seen above, the consensus of opinion is in favor of considering these as branches of one stock.

The main difficulty is with the Kashites (Kashshu). Their territory adjoined Elam, and just about where it was situated Herodotus locates a region "Kissia," and Strabo and Pliny, a free, mountain bandit tribe, the Cossæi. The effort has been made to distinguish between these, but the identities of both name and location are too complete to admit reasonable doubt but that the same people was intended.‡ The Kashites are described as mountaineers living in tents, just as Strabo depicts the mode of life of the Cossæi.

The ancient inscriptions in the various dialects of this stock, to wit, the Susic, the Neo-Susic, the Ansanian, the Apirian and the Proto-Medic, are comparatively numerous, but it must be acknowledged that little progress has been made in their decipherment. The 'second column' of the great Behistun inscription is held to be Proto-Medic (Neo-Susic). It is described as a tongue employing suffixes only, with at least four well marked tenses, and with a kind of declension of nouns.* It has been declared to be non-Aryan and non-Semitic; but there is nothing in its morphology as described to exclude it from the Aryan family.

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* *Shamashshumukin*, Th. i, p. 57.

† What is known as the *g* dialect. Zimmern, *Babylonische Busspsalmen*, p. 7. The myth of the culture hero Oannes, half man, half fish, rising from the waters of the Persian Gulf, has of course no historic value any more than that of Ea, the marine god, who created the first man.

‡ Friedrich Delitzsch asserts that the proper names in the Proto-Medic inscriptions "fast unverkennbar arisches Gepräge tragen" (*Die Sprache der Cossäer*, p. 49). Dr. Hugo Winkler says that there is "kaum eine andere Möglichkeit vorhanden" than that the Kashites belonged with the Medes and Elamites. *Geschichte Babyloniens*, p. [illegible]. McCurdy, reviewing the evidence, decides this is so "in all probability." *History*, etc., p. 113. They ruled Babylonia six hundred years and their names do not seem to be Semitic except where such were adopted. Their name for Babylon was *Kar-duniash*. Gesenius long ago suggested that the Chaldees might be "the Chardim," allied to *Kard*, *Kurd*, names applied to Aryan peoples derived from old Persian *Kard*, Ossetic *Khard*, etc., the ancient Aryan term for the sword or dagger, and also for iron (Schrader, *Prehistoric Antiquities of the Aryan Peoples*, p. 224). There was a tribe, the Kaldani, among the Kurds who claimed to be lineal descendants of the ancient Chaldeans (Loftus, *Travels*, p. 99). What if the primitive Babylonian civilization should turn out to be of Aryan origin after all?

It has been the custom with most Assyriologists to take for granted that all the tribes mentioned, as well as others inhabiting Elymais and Media in early days, as the Parsua, Andia, Namri, Ellipi, etc., were neither Aryan nor Semitic. In this spirit Dr. Winckler in his lately published History asserts that it was not until the reign of Psalmanassar II (about 850 B.C.), that the Aryan Medes (the Western Iranians) appear in Semitic history, their predecessors in the region having been non-Aryan.†

It is difficult to see any sufficient grounds for such an assumption. The Cossæi and their northern neighbors the Mardi, whom Strabo describes, were certainly Aryans; and if the Kasshu were the ancestors of the former they, too, were of Aryan lineage. The Elamites of Shushan, the palace, maintained their power till a late date; their descendants were the Uxii of the Alexandrian conquest, and these were surely not of an allophyllic stock. They were either Semitic or Aryan. A thousand years B.C. the powerful and warlike Minnean nation mentioned by the prophet Jeremiah was on the southern shore of Lake Urumia, and that they were of Aryan speech is attested by such names of their kings as Iranzu, Ulusunu, etc.‡ The theory which has been advanced by some that the Ossetes of the Caucasus, who speak an archaic Aryan tongue related

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*F. H. Weissbach, *Die Achämeniden-Inschriften zweiter Art*, p. 16 (Leipzig, 1890). Inscriptions in Neo-Susic date between 1100 B.C. and [illegible] B.C. Weissbach calls the language in which they are written "Finno-Tartaric richly mixed with Aryan words" (*Ibid.*, p. 11). On the other hand Dr. Heinrich Winkler, an excellent authority, formally denies that it can be classed with any Ural-Altaic language. *Ural-Altaische Völker und Sprachen*, p. 160. As Weissbach has shown the linguistic unity of Anzanic-Susic (Elamitic) and Neo-Susic (old Medic) in his *Susische Keilschriften*, 1891, p. 34, this applies to the whole group.

† *Geschichte Babyloniens und Assyriens*, s. 242.

‡ *Jeremiah*, chap. li, ver. 27. An admirable article on "Das Reich der Mannäer," by Waldemar Belck, may be found in the *Verhandl. Berliner Anthrop. Gesell.*, 1894, p. 479, *sqq.* He does not identify their ethnic relations; but to me the proper names admit of no doubt that they were Aryans.

to Iranian, were in fact descendants of the Proto Medes, driven from their southern homes is deserving of respectful consideration *

Whether the Guti and the Lulubi who possessed the valley of the Tigris on the east of the stream (from Lat 34° to Lat 37°) belonged with the Susic group, the material is too scanty to decide Their writing was in Babylonian, and their royal names largely Semitic, but neither of these facts is conclusive † While Prof Hilprecht has classed them with the Semites, Oppert has suggested, not without some show of reason, that the name "Guti" has an Aryan sound, like Gothi, the Goths, and therefore that the tribe itself may have been of this blood ‡

The vocabularies of these languages might be supposed to give definite information concerning their relationship The material in the Kashite, Susic and Medic is, however, too scanty to admit of satisfactory comparison Of the Sumerian, at least one third the words are acknowledged by believers in the tongue to be of Semitic origin Others, as *balag*, axe (Greek, πελεκυς), *gushkin*, gold (Armenian, οσκι), are admitted to be Aryan To these, it seems to me, should be added the well known word *tur*, son, which is also Susic, and belongs in the oldest *guthas* of the Avesta §

The numerals, except in Sumerian, have been very imperfectly ascertained The following lists will serve for comparison

	SUMERIAN	ASSYRIAN (ROOTS)	INDIAN	GEORGIAN
1	*dish ash*	*ahad*	*eka*	*ar arti*
2	*min man dal tag kash*	*shnai*	*dwa*	*ori* [illegible]
3	*pish esh ush*	*shalush*	*tri*	*sami sa i*
4	*lim lam*	*arba*	*tshatur*	*othxi*
5	*id ia*	*hamis*	*pantcha*	*χuthi χut*
6	*ash*	*shash*	*sas*	*ekhusi ushkhwaash*
7	*imin*	*sibi*	*saptan*	*shwidi*
8	*us sa*	*shamna*	*ashtan*	*rua* [illegible]
9	*ilim*	*tisi*	*navan*	*tsχra*
10	*u*	*ishr*	*dasan*	*athi withi*
20	*nish shana min*	*isra*	*visati*	*otsi* (= 2 × 10)

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* *Mems de la Société d Anthropologie de Lyons* 1891

† Winkler believes that the Guti had a tongue of their own but wrote in Semitic *Geschichte Babyloniens* p 32 Hilprecht gives reasons for holding that Semitic was the native language of both Guti and Lulubi *Old Babylonian Inscriptions* pp 12 14 (Philadelphia 1894)

‡ *Revue Archæologique* 1893 p 363

§ In the Avesta the Tûra people are Iranians (not Turanians) See W Geiger *ubi supra* p 32 In Persian legend Tur and Fra were brothers sons of Frêdûn the founder and father of the Iranian tribes The Armenian *os-t-r* son preserves the radical The first syllable corresponds to the Greek υιε The second probably defined the oldest son and hence came to have the sense of chief prince This analogy has been suggested to me in part by Prof Hilprecht

A few common words taken from the tongues mentioned with their correspondents in the Caucasic and Brahui dialects will show how slight is the lexical similarity between them

	SUMERIAN	C ITAN	S C R A NANI	HITTITE	FOR AN	T AN	BR
Man	l	n all	h		m ka s		bu d gh
King	l gal	a	s k k k k	s n			
Lord		b			t a a l		
Servant		m l k k					
Son			shal	s t r n s	sh u	n n	n
Child	d dun u	ula n s nash			b	b	k
G l	l n	b	n p		g	b sh	
Heaven	a a	ll l lag q			c	oa a	
Star	u	d u u			n x		s a
Head	sng	a h				k k	k n
Foot	jc	a n ru sn u			f	g l	na
Land	k kl	t sh	n u n			a	s [nce
Wind	q n	t hna			k		
B v	1	s			s	e	b
Horse	e				s	k	
Moon Month	u				1	a	tá
Name	n				aχ		
Great	g l			n s s	d d gn jal		balo
Hand	sh		k p		χ	xnb	d
Nose	k		s		x l	m	bi an

In such ethnographic questions the elements of historical connections and duration of time enter as significant factors. For that reason I insert the following synoptical table of

PROTOHISTORIC BABYLONIAN CHRONOLOGY *

B C	
4000	King Ur Nina at Lagash (Tello)
3850	Alusharshid conquers Elam
3800	Sargon I rules central and southern Babylonia and Elam
3750	Naram Sin his son at Sippar
3000	Ur bau rules at Lagash
2800	Supremacy of the kings of Ur
2750	Gudea (Nabu) rules at Lagash
2350	Babylonia is conquered by the Elamites
2300	Abraham departs from Ur

* The dates have been kindly revised for me by Prof Hilprecht They may be regarded as the minimal which can be assigned

B.C.

2250 The Elamites under Chedarlaomer enter Palestine and are defeated.

2250 Rim Sin, last king of Sumer and Accad.

2240 Chammurabi expels the Elamites and rules both north and south Babylonia.

1730 to 1140 A dynasty of Kasshite kings rules at Babylon.

1330 Babylonia is conquered and reduced to a tributary by the Assyrians.

No one can glance over this table without being impressed with the long and close connection which the Elamitic and Kashitic tribes had with the Babylonian Semites. This must have left deep ethnic traces on all three stocks.

THE ANATOLIANS (HITTITES).

The region included in Cappadocia, Galatia, Cilicia and western Armenia was known to the Babylonians from very early times as *mat Hatti*, "the land of the Hittites," a people who bore the same name in the Egyptian documents, *Heta*.* They were non-Semitic, but their precise affiliations have not yet been decided. They had a syllabic hieroglyphic writing which probably arose in Cilicia,† and which has been in part interpreted, but not yet sufficiently for extended comparison.

It is almost certain that the same people extended westward through Lycaonia, Pisidia, Lycia, Caria and Lydia;‡ that is, along the whole south coast of Asia Minor to the Ægean sea, and northward to the boundaries of Phrygia and Mysia, which were inhabited by tribes of Hellenic origin.

This southern family has been pronounced by Sayce to be of "Mongolian" connections, by Hommel and also at times by Sayce to be "Alarodian," i.e., Georgian, by Pauli and Tomaschek to be a wholly independent linguistic stock, to which the former gives the name 'Pelasgian,' and argues that its European connections were the Pelasgi and the Etruscans.* On the other hand, Fr. Müller, Mor. Schmidt, G. Radet and P. Jensen have concluded that it is some remote, not clearly defined member of the Aryan family.† While J. Halévy, on the strength of the inscriptions from Sindjirli, has claimed the Hittites who once lived in that region as Semites.

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* The earliest reference to the Hittites in the annals of Mesopotamia is to a conquest of Akkad by the king of Hatti (or Hati) about 3800 B.C. See authorities quoted by de Morgan, *Mission Scientifique au Caucase*, p. 13. This author believes that about 4000 B.C. the allophylic white stock, *i.e.*, the Caucasic peoples, overran much of western Asia. *Ibid.*, p. 17.

† Dr. W. Max Müller claims that it certainly did. *Asien und Europa*, etc., p. 350.

‡ The Philistines who invaded Palestine towards the close of the second millennium B.C. quite certainly belonged to this stock, and not to the Cretans as has lately been reasserted by Mr. Arthur J. Evans (*Proc. Brit. Soc. Adv. of Science*, 1894, p. 776. Compare Dr. W. M. Müller, *u. s.*, p. 387 *sqq.*). There were never any Hittites proper (*i. e.*, from Cappadocia) settled in Palestine. The Orontes marked their furthest southern limit. *Ibid.*, p. 21.

Recent archæological researches in Paphlagonia present evidence that before the arrival of Greek colonies from the west this territory was peopled by the same stock, and at the height of their power they may have controlled a large portion of the eastern shores of the Ægean sea. This was about 1200–1100 B.C., and it has been argued from a variety of evidence that near the former date they were conquered and scattered or absorbed by their Semitic, Egyptian and Hellenic foes. Prof. Ramsay and others have identified them with the Amazons of the Homeric legends on reasonably good grounds.‡

It is quite likely that *mat Hatti* was a very vague phrase to the Assyrian mind, and it is wiser not to employ 'Hittite' as an ethnic term. It has been proposed (by whom first I know not) to designate collectively the tribes above named as related by the term 'Anatolians,' from the ancient name of Asia Minor, and I adopt this appropriate suggestion. Perhaps some of the easternmost and southernmost of the so-called Hittites did not belong in the Anatolian group, but those in most of Cappadocia and Cilicia in all probability did.

At various times after and probably before the dawn of history the Anatolian group proper extended its conquests southward, and it is the opinion of Hoernes§ and others that they were the pre-Semitic inhabitants of the whole of Syria. It is even possible, as Mariette and Hilprecht‖ have suggested, that the Hyksos dynasty of Egypt in the second millennium B.C. was an advanced outpost of the group, though this it

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*Pauli, *Inschrift von Lemnos*, p. 79. T[illegible] *D[illegible]* [illegible] in the *Mittheilungen* of the Vienna Anthrop. Soc. for 18[illegible].

† Dr. Jensen's article was published in the *Sunday School Times*, Philadelphia, April 1, 1895.

‡ See a series of articles on "Die Paphlagonischen Felsengräber," by Dr. G. von Kannenberg, in the *Globus*, Jan. and Feb. 1895, especially p. 121, note.

§ Dr. Moritz Hoernes, *Die Urgeschichte des Menschen*, p. 4[illegible] (Vienna, 189[illegible]).

‖ Hilprecht, *Assyriaca*, p. 140 (Boston, 1894).

present rests as a surmise only That the Kashites and kindred tribes on the lower Tigris were distant members of the same group has been suggested by Hommel and Hilprecht but with the material difference that the former defends the connection with the Caucasic, the latter with the Aryan linguistic stock

When we combine what we know of the physical type and the language of this ancient people there would seem to be evidence enough to assign it its ethnic position

The type has generally been studied from the local monuments and the Egyptian records The portraitures on the latter especially of enemies are often either conventional or caricatures When we see the Hittites shown with yellow or red complexions receding foreheads oblique eyes protruding upper jaws and high cheek bones * and all very much alike, we may be sure that both motives were present The delineations on their own monuments are quite different and much higher, more Aryan in character †

It is a mistake to suppose that the so called Hittite art was altogether borrowed from their Semitic neighbors While the old Chaldean influence is visible in it there is also a marked element of originality which should not be overlooked The motives of the latter constantly recall Aryan inspiration and forms ‡

More trustworthy than sculpture are the bones from the oldest graves of the region In examining these Dr von Luschan made an interesting discovery He found that a peculiar type in early times extended over southern Asia Minor from the Ægean east to the Euphrates and northeast into Armenia The skulls were remarkably broad and high, and the bones showed a people of short stature In other words he discovered just the type of the globular headed, short Celts of Central Europe He went further He found that in the more sparsely inhab

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* See McCurdy *History Prophecy and the Monuments* Vol 1 p 193

† A number of them are given from various sources by W Max Müller *Asien und Europa* pp 3 5–340 They are generally painted with reddish hair which is worth noting but may be conventional The absence of beard indicates the custom of shaving On the conventionality of the Egyptian artists see the same writer in the *Papers of the Oriental Club of Philadelphia* p 8 (Boston 1891 The ruins of the ancient Pteria are supposed to offer the purest examples of native Hittite work

‡ L'influence qui a présidé aux arts chez ce peuple est purement chaldeo babylonienne et non assyrienne mais en meme temps elle conserve son originalité De Morgan *Mission Scientifique au Caucase* p 1 8

ited portions of the country there still live a shy, secluded people, the Taktadschy, who preserve just these traits, and he at once noticed their similarity to the Auvergnats and Savoyards. They are recognized as the descendants of the most ancient inhabitants and certainly present their characteristics.*

The inscriptions and local dialects of Cappadocia and Lycia preserve some expressions which appear to me to be of the Lesghian group of the Caucasic stock, as

	CAPPADOCIAN	LESGHIAN	
woman	*lada*	*thlrih*	wife.
son	*tideime*	*gedrimi*	son (thy).
six	*lingir*	*outl'iju*	
seven	*titli*	*othlqi*	
eight	*mutli*	*mithlji*	
nine	*dangir*	*udeijo*	

These indicate that at some time in the past there has been an impermeation of Caucasic elements into the Cappadocian population.† The Taktadschy have adopted the modern Turkish, at least for intercourse with the world.

The Anatolian inscriptions proper seem as likely to be in Aryan as in any other stock. The personal pronouns *mi* and *ti* are surely Aryan, and not "Alarodian," as Hommel argues;‡ they are the English Aryan *me* and *thee*; the word for son, *sti*, corresponds to the Armenian *ustr*, "sirs," king, is Aryan, and so on.§

The strongest evidence is in the ancient place names. These show peculiarities in western and southern Asia Minor which have been repeatedly commented upon. A large number of them terminate in *anda* (*enda*, *inda*, *onda*) or in *ess* (*assa*, *essos*, etc.). They extend westward into Thrace and Macedonia, proving a European connection in prehistoric times. Pauli, Toma schek and others claim that they cannot be analyzed as of Aryan extraction *

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* See Von Luschan's article "Die Taktadschy," in the *Archiv für Anthropologie*, 1891.

† Tomaschek quotes some of these from the Glossary of the Cappadocian dialect lately published by Capolides, which work I have been unable to see. Tomaschek does not offer any analogies for them. Others belong to the Lycian inscriptions, of which a Corpus is soon to be published by the Imperial Academy of Vienna.

‡ In the *Archiv für Anthropologie*, Bd. xix, p. 251.

§ See the article of Dr. Jensen above referred to for other instances, and also his replies to the criticism of Prof. Sayce in the *Academy*, 1894. Of course, within the territory of the Anatolians we may expect to find both Semitic and Caucasic names and inscriptions, as it was the meeting ground of the three stocks for thousands of years before history began, as it has been ever since.

Such an opinion seems to me without foundation We find such place names wherever the Celtic stock of central Europe left its traces For the termination in *ess*, I need but instance Vindonissa, Vogessus Sigonessus, Bodiocassus, etc Its signification is well known It means "the seat" (*sedes sessio, positio*) of the person or tribe and in this sense was especially employed as a suffix in the Celtic dialects †

The termination *an ta* in the form *anta* or *ante* is a familiar Celtic suffix of tribal names, as Brigantes Trinobantes, etc From these were derived place names as Carantia, Brodentia etc The later terminations in *anza* or *enza* as in Braganza, Piacenza, etc, were corruptions of this as was also the German termination in words like 'Pegnitz," etc ‡

Many other proper names of places and persons from southern Asia Minor have lately been analyzed by M Georges Radet, and his researches appear to place beyond doubt these two theses—1 That the original Anatolians constituted an ethnic unit, 2 That they spoke a tongue of Aryan affiliation §

Many of these names have a Celtic physiognomy Thus the Hittite royal names, Thargathazas Tarthisebu, etc, simulate the Gallic Thartontis, Turones, etc in which the prefix *tar* (*thar*, *tur* or *dor*) means "above, across," and by metaphor, superior, leading, etc ‖

A more striking coincidence is offered by some religious terms

It is generally conceded that the Ephesian Diana was originally a 'Hittite" deity, and that her name Artemis is an Anatolian word It is also known that the original form under which she was worshiped was that of a black conical stone, thought to have been a meteorite Now in Celtic *artan* means a stone," and it often forms a part of proper names, as Artgal,

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* Pauli has been industrious in collecting such place names A long list will be found in his *Inschrift von Lemnos* above quoted

† This is the explanation of Zeuss *Grammatica Celtica* pp 61 and 747 749 I am surprised that it has been overlooked

‡ See Zeuss *Grammatica Celtica* pp 759 760 It has been suggested that this termination is the Old Indian *tada sindhu* river whence Indus, etc applied to tribes towns etc on a river

§ See the *Revue Archéologique* Tome xxii (1893) p 209 *sqq*

‖ The Celtic *tar essi* (see above) is translated super locum in loco Zeuss, u s, p 613

Artbran, Artobriga, etc. Still more: when St. Domitian undertook the conversion of the Celtic Segusiani, who lived in the Auvergne mountains in France, he found what appears to have been a sacred rock among them which was called *Artemia*![*]

I have already referred to the Amazons as a Hittite class of priestesses. Lieut. von Kannenberg derives their name from the Circassian *maza*, moon; but this Circassian word is not from a Caucasic, but an Aryan root, Sanscrit *masa*, "the measurer," and was applied to the moon as the measurer of time, as Von Erckert has abundantly shown.[†] The Amazons were indeed the priestesses of the moon, but their name is Aryan strictly and refers to their being devoted *ad masam*, to the moon, as the measurer of the nine months of pregnancy.

This identification explains how it happened that in the year 279 B.C. a horde of Gauls from central Europe crossed the Hellespont, and proceeding to central Asia Minor, settled in a portion of the ancient *mat Hatte*, from them ever since known as "Galatia."[‡] There they lived, retaining their own tongue with the usual Celtic tenacity so completely that St. Jerome, seven hundred years afterwards, says they were the only people of his day in the whole of Asia Minor who did not speak Greek[§]

To sum up, then, the view I advocate is, that the Anatolians proper were of the Celtic stem of the Aryan race; that several thousand years B.C. they came from the west and occupied the valley of the Halys and more or less land to the east and south of it, driving out, or subjecting and retaining, an earlier population of the Caucasic (Lesghian) stock; that about 1200 B.C. they were themselves overwhelmed by Semitic and Hellenic adversaries; that a portion of them rejoined the Celts of Europe; and that it was to make good some traditional, ancestral claim that the descendants of these in 279 B.C. again possessed themselves of the basin of the Halys[||]

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[*] "Usque ad petram quæ Artemia dicitur." Zeuss, *Grammatica Celtica*, p 78.

[†] *Die Sprachen des Kaukasischen Stammes*, Bd. I, s. 104

[‡] "Galatæ" is from the Celtic root *gal*, violent, and is translated by Zeuss "viri pugnaces armati" *Gram. Celt.*, p. 993, note. The authorities on this invasion are well collated in Schliemann's *Ilios*

[§] This also explains the difficulty commented on by Dr John Beddoe (*The Races of Britain*, p. 22) that various local names in Galatia and its neighborhood anterior to the arrival of the Galatians appear to be from Celtic roots. Niebuhr's theory that the Galatians were Teutons has now, I think, no defenders.

[||] The assertion of Schliemann (in *Ilios*, p. 120), that "No Aryans were settled east of the Halys before the eighth century B.C.," is possibly true if confined to Aryans of Hellenic descent, but certainly not as a general statement.

CONCLUSIONS.

My general conclusions are:

1. That there is no evidence of a prehistoric, non-Eurafrican race in western Asia. Its soil has always been possessed either by the Caucasic, the Semitic or the Aryan branches of the White race.

2. There are distinct signs that the Caucasic stock in prehistoric times extended over large areas south of their present homes, and were driven north by the attacks of the Aryans and Semites.

3 The chains of the Amanus on the west, the Masius on the north and the Zagros on the east have been from immemorial eras the limits of durable ethnic impressions by the Semites.

4 From the Zagros to the Pamir, the Aryan stock occupied or controlled the land at the dawn of history. Medes and Proto-Medes were alike Aryans.

5 The civilization of Babylonia arose from some branch or blend of the White race, and not from any tribe of the Asian or Yellow race, still less from the Dravidian or Black races.

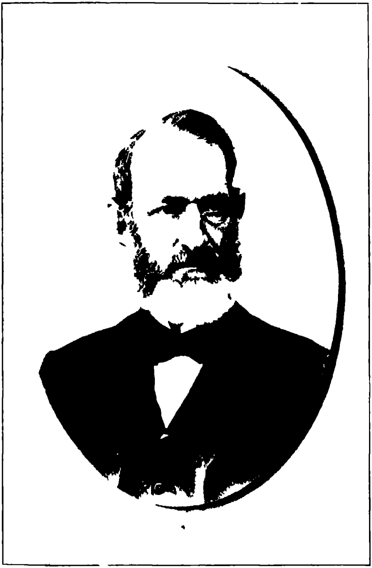
6. The Anatolian group of Asia Minor were allied to the Gallo-Celtic tribes of central Europe, and preceded by probably several millenniums the Hellenic migrations into Asia.

Biographical Sketch of the Hon. Thomas H. Dudley, of Camden, N. J., who Died April 15, 1893.

By William John Potts.

(Read before the American Philosophical Society, April 19, 1895)

Thomas Haines Dudley, born 10th mo. 9, 1819, died 4th mo. 15, 1893, elected a member of the American Philosophical Society 10th mo. 15, 1880, was descended from Francis Dudley and Rachel Wilkins, his wife, a member of the Society of Friends who came from the Parish of St. Peter, Wolverhampton, Staffordshire, about 1780. Francis Dudley was the son of John Dudley and Mary Arney, of that parish, who were married in 1708. Another account says the name of his mother was Jane Dudley. John, the English ancestor of this New Jersey family of Dudley, died in 1746. In the parish register of St. Peter's he is named as "singing man and clerk."



Thomas H. Dudley

Francis Dudley, the eldest son, so tradition says, came over with Nathan Middleton, and shortly after married Rachel Wilkins in 1733, settled at Evesham (the "Vale of Evesham," as the early settlers called it in memory of their old home in England), Burlington county, N. J. This progenitor of the name in this State died in the early part of 1782 at Evesham. We find his will on record in the Secretary of State's office at Trenton, and that of his widow Rachel a few years later, in 1786. He leaves his three sons goodly farms, upon the metes and bounds of which he dwells minutely with all the pride of a Saxon landholder. In this connection we are reminded of the eloquent words of Mr. Blaine in his oration on President Garfield, which are equally applicable to Mr. Dudley. Mr. Blaine says he "was born heir to land, to the title of freeholder, which has been the patent and passport of self respect with the Anglo-Saxon race ever since Hengist and Horsa landed on the shores of England."

Thomas Dudley, son of Francis, married Martha Evans, 11th mo. 27, 1763, of an old and respectable family among Friends. They had ten children. Evan Dudley was the ninth child; he was born 1st mo. 1, 1782, married Ann Haines and died 3rd mo. 31, 1820, aged thirty-seven years.*

Thomas Haines Dudley, the subject of this biography, was the youngest child of this marriage. His early youth was passed in Burlington county, where he was born, working upon his mother's farm. She was early left a widow with four children. She was a descendant of Richard Haines, of Aynhoe, Northamptonshire, whose children came to Burlington county, N. J., in 1683, thus we see Mr. Dudley had a claim to early American ancestry on both sides of his family. For some years he taught school in the vicinity and saved sufficient money to begin the study of law under William N. Jeffers, a lawyer of good standing in Camden. During this period, while he was returning from a night school late in the evening, an incident happened which we have often heard him relate without any thought of our application of it to himself. It showed the same determination and courage which was the ruling trait of his life and the cause of his success. Passing at twelve o'clock at night over a lonely road by a graveyard, he saw in the grounds what seemed to him, the more he gazed upon it, to be the figure of a human being in white, moving and bending toward him. Though so frightened that his teeth chattered and his knees fairly knocked together, he determined to go forward and examine it. Climbing the fence, he was strongly tempted to go back, he shook with fright, the thing seemed so supernatural in the moonlight, but reasoning strongly within himself, "there is no such thing as a ghost," he determined to push on, and conquering all his fears, pressed forward and found that the weird figure was a sheep with its horns caught in the bushes, moving up and down in its efforts to get free.

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* We are indebted to Miss Henrietta Haines, of Moorestown, N. J., and to Miss Martha Evans Ballangee, of Asbury Park, N. J., for valuable genealogical data, and regret that limited space does not permit us to give other details.

Between fifty and sixty years ago there was more belief in ghosts than now and when we consider Mr Dudley was then a young man brought up in an atmosphere in which this belief was not uncommon the circumstance was one that few—alone at such an hour in the middle of the night in a lonely country graveyard—very few indeed would have stopped to investigate His description was much more graphic and awe inspiring than we can give and was related to the writer as an instance that we must not be influenced by groundless fears in what reason tells us is untrue

Among Mr Dudley's papers is a draft of a short article by him signed Many Citizens probably one of his first political efforts It was published in the *United States Gazette* during the year 1843 This concerns the removal of Judge Philip J Gray from the office of Surveyor of the Port of Camden He was a man of character highly respected and was afterwards reinstated by Zachary Taylor President John Tyler is taken to task for this removal as being inconsistent with the views expressed in his inaugural address to the people of the United States April 9 1841 where he says I will remove no incumbent from office who has faithfully and honestly acquitted himself of the duties of his office except in such cases where such officer has been guilty of an active partisanship or by secret means the less manly and therefore the more objectionable has given his official influence to the purposes of party thereby bringing the patronage of the Government in conflict with the freedom of elections

In 1843 Mr Dudley held the two offices of City Clerk and City Treasurer of Camden when aged twenty three

When twenty four years of age we find him taking an active part in the Clay campaign as Secretary of the Clay Club of Camden August 20 1844 drawing up the minutes of the District Clay Club Convention held at Bridgeton at that date as its Secretary Dr Ephraim Buck, President associated with men some of whom were to become famous in the state namely Abraham Browning A G Cattell Dr J Q Keasbey Charles P Elmer and others

Among his papers is a rough drawing of a Clay Cabin a curiosity to the present generation It was located at Fourth and Market streets Camden and these few details are worthy of being recorded for the history of politics in this vicinity in what was a very exciting campaign This cabin of these primitive political days of half a century ago was '46 feet deep and 25 feet front with of course, a flagpole made in the early part of the year 1844 for the Camden Clay Club The building came to a little more than the contract costing in all $155 '32 benches at 50 cts pr peas' the carpenter's bill calls for which gives an idea of Clay's political following in the neighborhood Allowing five persons to a bench we may conclude the cabin held 160 persons Mr Dudley seems to have been active in all of this organization A good speech of his made on the occasion of a flag presentation to this organization has been preserved It will be remembered he was then but twenty four, and at that youthful age he takes strong ground for the protection of American industry His first child who died in infancy was named for Henry Clay This was the early school of one who was afterward to have a much more enlarged sphere

With his hard earned savings and the money he had obtained by mortgaging his farm to study law he at last passed his examination in 1845 and having been admitted retired to his room at his boarding house in Camden shut the door threw himself on the bed greatly depressed wondering where his bread was to come from without a single client when there came a knock on the door and a client appeared in the person of Mr Benjamin Cooper of Camden county engaging him for a case of which there were perhaps few men able or willing to undertake from its difficulty and danger in which all the instincts of humanity required a speedy action A free colored family of Burlington county personally known to Mr Dudley had been kidnapped into slavery a mother and three children and had been rapidly driven away on the road South Members of the Society of Friends of Burlington county hastily met together and subscribed it is said a thousand dollars to buy back the woman and her children The difficulty then arose who was to pursue the fleeing kidnappers and their victims and redeem the captives a most dangerous task in those days for a Northerner to venture across the border on such an errand of mercy and of justice

Mr Cooper informed his coadjutors that he knew such a man who had just passed the bar whose sympathies were with the Abolitionists and above all possessed the energy and determination necessary who knew besides the captives as the woman had often worked on his mother s farm when he was a child Disguising himself in the character of a slave trader who were often Northern men from the borders Mr Dudley procured a large broad brimmed hat a whip and taking a pair of pistols he followed the track of the fugitives and was so fortunate as to discover them near the Head of Elk in Maryland He gave out that he was from a distant part of the country buying slaves to take South The sale was not accomplished without its dangers for presuming he must have a large sum of money with him he overheard a plot to rob him, and sat up all night in the hotel with his pistols before him on the table Keeping up the character of a slave trader he had behaved so roughly to the woman and her child that they did not recognize him and took him for what he pretended to be He ordered them to be locked up safely until he could take them away in the morning The poor woman overcome with fear reluctantly followed Making a detoûr south to deceive the kidnappers, it was not until on the boat at Wilmington Del that he asked the poor creature if she did not know him and received for a reply ' All she wanted to ' Her fears turned to joy when he said Don t you remember Nancy Dudley s little boy Tom who used to play pranks on the cows you milked at Evesham and make them kick the pail over?" And when he told her she was going home her happiness can be imagined

We give below a copy of the deed of sale,[*] with a feeling of earnest thankfulness that a bill for a slave is no longer a possibility in this country Of the other children, a boy and a girl, it is said the boy was advertised for sale in Baltimore, and was bought by Mr Dudley for ninety dollars, before the sale came off. The girl was purchased by a lady in Baltimore.

The West Jersey Mail, a weekly paper of Camden, records his marriage in its issue of Wednesday, March 11, 1846, as follows: "In this city, on fourth day evening last, 4 inst. by Friends' ceremony, Thomas H Dudley to Emmaline, daughter of Seth Matlack."

She was a faithful and devoted wife, the mother of three children, who survived infancy—Edward, Mary, and Ellen. Mrs. Dudley' died at Madrid, Spain, February 9, 1884, regretted by all who knew her as a woman of a happy disposition and kindness of heart, with many qualities serviceable to her husband in his career.

In July, 1848, he was admitted a counselor at law While practicing law and engaging in politics his acquaintance began with such men as the late Henry C. Carey, David Davis (afterwards Judge of the Supreme Court of the United States), Judge Ephraim Marsh, and others active in political life, which acquaintance ripened into friendship and lasted to the end of their lives

In the beginning of the decade of 1850 we find among his correspondence, numerous letters in the minute hand of the eminent writer on the tariff, Mr. Carey, above mentioned, largely upon this subject, of whom he was an apt pupil

In 1851 he was elected City Treasurer of Camden, and in the years 1856 and 1857, City Solicitor, in 1860, Chairman of the Republican State Executive Committee of New Jersey.

Mr. Dudley was one of the number of those saved in the burning of the ferryboat *New Jersey* on Saturday evening, March 15, 1856 This calamity was one of the most terrible which had ever occurred in this vicinity It was brought prominently before the inhabitants of the two cities, Camden and Philadelphia, by the drifting of the steamboat in flames, in full view of thousands of spectators from both sides of the river, who could see the unfortunate passengers when near Philadelphia leap one by one into the water, driven over by the fire, and could distinctly hear their cries. The solemn sound of the State House bell, the ringing of the firebells in both cities, and the lurid glare which lighted up the Delaware, added to the horrible scene, of which the writer was one of the eye-witnesses from the Camden shore The pilot box was the first part of the vessel to catch, and consequently the boat soon became unmanageable. Loaded with heavy wagons and a hundred passengers returning to their homes in Camden, nearly fifty persons, it is said, were lost. Finally driven by the flames, Mr. Dudley, throwing away his overcoat to sink more easily and avoid the paddle-wheels which struck many, sprang as far as possible from the side of the vessel, and came up in a mass of crushed ice, which gave but a partial support. It was in this situation that he saw many leap into the water, their clothes on fire and their cries most agonizing—a scene which naturally had an effect upon his nervous system, and one never to be forgotten, of which he rarely ever spoke Shouting until his cries grew faint, he was despairing and overcome with cold, when several men in a boat which put out from the Philadelphia side, rescued him, and he was carried in a state of apparent death to the hotel at Arch street wharf, where all efforts to bring him to life seemed in vain. Mr Albert S Markley, of Camden, a well-known director in the Camden & Amboy Railroad, happening in, recognized him, and after long and persistent efforts, though told it was no use, the man was dead, restored him *to consciousness*. Mr. Dudley was then in his thirty-sixth year

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[*] Know All Men by These Presents that I, William E. Chance of the county of Caroline, State of Maryland, for the consideration of one hundred and fifty dollars current money, to me in hand paid by Thomas H Dudley of the State of New Jersey, the receipt whereof I hereby acknowledge, have granted, bargained, sold, aliened, and delivered, and by these presents do grant, bargain, sell, and deliver unto the said Thomas H. Dudley my negro slave Maria Johnson and her child Susan about 16 months old, which said slaves Maria and Susan I will warrant and defend to the said Thomas H. Dudley, his executors and administrators and assigns against me, my executors and administrators and against every other person or persons whatsoever In Witness Whereof I have hereunto set my name and affirmed my seal this eighteenth day of October in the year of our Lord one thousand eight hundred and forty-five.

In the presence of } Signed, WILLIAM E. CHANCE. (Seal)
I. M. BERNARD.

In 1850 he was Chairman of the State Executive Committee of New Jersey.

"In 1860 he was chosen as one of the Senatorial delegates from the State at large, in the memorable convention at Chicago, which nominated Abraham Lincoln for President He was a member of the committee which framed the platform adopted by that convention, and it was he who introduced the plank favoring incidental protection to American manufactures and was mainly instrumental in carrying it through the convention He supported Mr Lincoln as a candidate for nomination, in opposition to Mr Seward, and took a prominent part in bringing about that nomination.

"The manner in which this nomination was effected, and Mr Dudley's part therein, is thus related by Charles P. Smith in *Beecher's* (Trenton) *Magazine*. As these are facts of historic interest, we give the account in full." [We shall introduce Mr Smith's account by a few words from Mr. Isaac H Bromley's striking and vivid paper, with the same title, in *Scribner's Magazine* for November, 1893, a spectator as a journalist in the scenes which he describes He was afterward one of the editors of the New York *Tribune*. Mr. Bromley says, "The Chicago Convention of 1860 was much more than an organized body of delegates, its work much more than that of nominating candidates. Its transactions overshadowed in importance, outreached in consequences, and transcended in results those of any assembly of men that was ever gathered on this continent. I shall not stop to answer the reader's rising thought of Philadelphia and 1776 " This is strong language, but Mr Bromley impresses the reader with its truth. Both narratives, though widely different in their style, deserve a place in the history of this important occasion]

"The Nomination of Lincoln

" As a member of the 'Opposition State Executive Committee' I signed a call for a State Convention in Trenton, on March 8, 1860, for the purpose of selecting delegates to the National Convention at Chicago. At that period there was a respectable and extremely active portion of the party in East Jersey in favor of nominating Mr Seward for the Presidency and seeking to secure for him the vote of this State in convention. Aside from the Presidential question, it was highly important that we achieve success in our own State, and this, I felt confident, could not be accomplished with Mr. Seward as our Presidential candidate It occurred to me that our proper course would be to hold the vote of the State on Mr. Dayton, and possibly give him the nomination. At all events, it might at least aid in nominating a candidate with whom success in this State was possible Mr. Thomas H Dudley came into the Supreme Court office one day on professional business, and I called his attention to what I deemed the unfortunate tendency of affairs He coincided with me in opinion, but argued that the loss of the State under the circumstances was unavoidable —at least he perceived no recourse I suggested that we start a candidate in our own State, to hold the vote, and named the Hon William L Dayton. Mr Dudley, after some consideration, assented I then advised holding a caucus of leading men of the party to give force to the movement, whereupon Mr. Dudley agreed to notify such gentlemen in the First Congressional District as he might deem proper and I was to summon from the State at large. We thus assembled some sixty prominent Jerseymen at Jones' Hotel, Chestnut street, Philadelphia I also spent considerable time in securing the attendance of a number of active Philadelphia Republican politicians. My object was to induce them to join in the movement, but they preferred Mr Cameron. As far as their coöperation was concerned, the movement was without success Abraham Browning, Esq , of Camden, presided at the meeting, and after considerable discussion, in which Mr. Dudley took by far the most prominent part, the Jerseymen present unanimously determined to use their best efforts to secure delegates in favor of Mr Dayton. The effect of this meeting was fully manifested in the State Convention. But a small moiety of the East Jersey delegates were for Mr Seward, while the large majority were decidedly for Mr Dayton. Mr. Dudley was selected as a delegate from the First District, and at Chicago was one of the most prominent and active members of the New Jersey delegation, exercising all necessary influence in holding the vote of his State for Mr Dayton until he was able to cast it for Mr. Lincoln, and practically give him the nomination.

"It was conceded early in the session of the convention that there were four doubtful States—New Jersey, Indiana, Illinois and Pennsylvania—and it was necessary to carry at least two of those States in order to nominate a candidate other than Mr Seward New Jersey presented Mr. Dayton, Pennsylvania, Mr. Cameron; and Indiana and Illinois, Mr. Lincoln Mr Seward was the first choice of a majority of the New England States, but the event disclosed that they preferred the triumph of principle to the success of their favorite. A committee of these States, headed by Ex-Governor Andrew, waited upon the New Jersey delegation at their rooms, and declared that Mr Seward was their choice, but if he could not carry the doubtful States they were willing to go for any one else who could, but added, 'Gentlemen, you see our difficulty; you are not agreed among yourselves, but present three different candidates. Now, if you will unite upon some one man who can carry them, then we will give him enough votes in the convention to nominate him. If you continue divided we shall go into the convention and vote for Mr. Seward, our first choice.' It was narrowed down to this, the four doubtful States must unite upon a candidate or Mr Seward would be nominated. The convention assembled Wednesday morning, without change in this state of affairs Mr Dudley was assigned a place on the committee to frame a platform, and kept busy until Thursday noon At that time the four doubtful States assembled at Cameron Hall to endeavor to unite upon some person. Ex-Governor Reeder presided. It was a noisy assemblage, and it very soon became evident that nothing could be accomplished as affairs then stood Mr. Dudley then proposed to Mr. Judd, of Illinois, that the matter should be referred to a committee of three from each of the four States He made a motion to this effect which was carried. Among those appointed were Judge David Davis, Caleb B Smith, David Wilmot and William B Mann, of Pennsylvania On the part of New Jersey, Judge Ephraim Marsh, Hon F T. Frelinghuysen and Mr. Dudley. The committee met at six P.M in Mr Wilmot's room and were in session until nearly ten P M. before anything was accomplished At that time it seemed that an adjournment would be carried without arriving at an understanding. The time had been consumed in talking and trying to persuade each other that their favorite candidates were the most available and best qualified It was then that Mr. Greeley went to the door, and finding no agreement had been reached, telegraphed to the *Tribune* that Mr. Seward would certainly be nominated the next morning as the Republican candidate.

"Finding that the committee was about to separate without achieving any result, Mr. Dudley took the floor, and proposed that it should be ascertained which one of the three candidates had the greatest actual strength before the convention, and could carry the greatest number of delegates from the four States in the event of dropping the other two. Judge Davis stated as to Mr. Lincoln's vote on the first ballot, and the probable vote of the Illinois delegates, in the event of Mr. Lincoln being dropped—that is, how they would break. The committee from Indiana and Pennsylvania also reported how the votes of their States would be cast if Lincoln and Cameron were both dropped The New Jersey committee made a similar statement as to the strength of Judge Dayton. It was understood that a portion of the New Jersey delegates would drop Mr Dayton, after giving him a complimentary vote, and go for Mr Seward

"This examination revealed the fact that of the three candidates Mr. Lincoln was the strongest. Mr. Dudley then proposed to the Pennsylvania committee that for the general good and success of the party they should give up their candidates and unite upon Lincoln. After some discussion, Mr. Dudley's proposition was agreed to, and a programme arranged to carry it into execution A meeting of the Dayton delegates from New Jersey was immediately called at James T. Sherman's room, at one o'clock that night, Judge Marsh and Mr Frelinghuysen, evidently not believing it possible to carry out the plan, did not attend the meeting; thus Mr. Dudley was the only one from the committee present. He explained what had been accomplished, and, after talking the matter over, they approved his action It was understood that Judge Dayton was to receive one or more complimentary votes, and then the strength of the delegation to be thrown for Mr Lincoln It was also arranged that Mr. Dudley was to lead off in voting for Mr. Lincoln, and then they were to follow. The Pennsylvania delegation likewise adopted the plan, first giving Mr Cameron a complimentary vote. The agreement of the committee was not generally known when the convention assembled On the first ballot the entire New Jersey delegation voted for Mr. Dayton, the next, that portion who favored Mr. Seward, voted for him, while the majority voted for Mr Dayton. When New Jersey was called on the third ballot, Mr. Dudley stated that he should vote for Mr. Lincoln and was immediately followed by all the New Jersey delegates save one. The result is known New England did what she promised, and Mr. Lincoln was nominated. It was the action of the committee from the four doubtful States which undoubtedly secured Mr. Lincoln's nomination; but for this Mr. Seward would have been nominated, and there is little doubt, just as surely defeated This is a plain narrative of the manner in which the nomination of Abraham Lincoln was brought about. It cannot be disguised that, had it not been for Mr. Dudley's energy and tact in the committee of the doubtful States, the nation in the emergency which so soon followed would not have had the service of that great and good man at the helm.

"Mr. Lincoln recognized his obligations to Mr. Dayton's friends by nominating that honored citizen to the important position of Minister to France. I wrote to Mr. Lincoln after his inauguration; stating fully Mr. Dudley's action in the convention, and asking his appointment as Consul to Liverpool Others likewise urged his claims, and he was appointed to the position, where his eminent services during the Rebellion were scarcely inferior to those rendered by our Minister at the Court of St James "

Early in 1861, before he had accepted the position of Consul to Liverpool, Mr Dudley went abroad for his health While there, he was appointed Consul to Paris, to fill the temporary vacancy, Mr Bigelow not having yet arrived and the former incumbent having proved a Secessionist.

The trying situation of Mr. Dudley and the little band of American patriots in Liverpool is best described by Mr William Everett in his address on Charles Francis Adams * He says "I was in England during the first two years of the war I was one of that little company of Americans whose duty kept us in England, scattered, isolated, scantily informed, learning what was going on at home chiefly from garbled telegrams, not knowing what to believe, yet called to account for everything rash or foolish done or said to be done in North and South alike; sneered at, taunted, patronized and forced every hour to fight the battle of our country's honor as truly as you who were in the regiments at home. You had your trials; believe me, we had ours You were five hundred thousand strong , we were scarcely a fair-sized regiment, and scattered farther apart than the pickets of a whole army corps. You had the nation at your very backs; we were cut off from it by ten days of ocean. You had those who took eager account of your triumphs and your disasters. We might bear tortures as acute as wounds or fever, and deal what blows we could, with none to note or sympathize Yet there we fought, resolved that the name of America should not die in the land from which her founders came And to him we looked as leader, as commander in our strife for honor , and none who fought under McClellan or Grant, under Dupont or Farragut, remember those heroes with more grateful devotion than that which we pay to the memory of Charles Francis Adams."

It is impossible to read Mr Adams' letters in "The Diplomatic Correspondence" without having a profound respect for the character of the man and his diplomatic ability. Mr Dudley's relations with Mr Adams were constant and close. Surrounded by spies, a written correspondence was not always deemed safe, as every moment the Consul at Liverpool was watched and followed. For these reasons he often took the train for London from Edgehill, having previously arranged to have his family take his valise in their carriage and meet him there. He had noticed that if he carried a handbag a spy was sure to follow and take the same train, surmising his destination. If without it, apparently he was free from this espionage The numerous letters from his friend, Mr. Benjamin Moran, the Secretary of Legation at London, were purposely written in such a vague way that if they were intercepted, they would be of no ser-

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* William Everett's "Address on Charles Francis Adams," July 4, 1887, Cambridge, 1887, pp. 85, 86, 87

vice to the rebel agents Having examined a large number of them we must give Mr Moran credit for great ingenuity

Liverpool which owed its early rise and progress to the slave trade was in a great variety of ways the stronghold of Southern sympathy An instance is given in a letter of Mr Seward to Charles Francis Adams in The Diplomatic Correspondence

' MAY 1, 1862

"*Sir* —Mr Dudley our vigilant consul at Liverpool writes that the subscription which was gotten up in that place to aid the insurrection in this country mounted up to £40,000 sterling and that all that large sum of money has been invested in arms and munitions of war He also states that a second subscription for the same purpose is now being filled up in the same place

I can hardly doubt that he has brought these facts to your notice and that you have called the attention of her Majesty s government to them

The Consul received numerous threatening letters warning him unless he ceased his opposition to those who gave substantial assistance to the Confederate government his life would be taken and if found in certain designated spots he would be shot on sight These threats had little effect on his determination to do his duty It is pleasant to meet with an occasional friend of the Union whose sympathy an American at such a crisis needed at this advanced outpost in what may truly be called the enemy s country John Bright was such a one, whose letters of heartfelt sympathy we print below * On one occasion we meet with the letter of an undecided friend from an anonymous source, who seems ashamed of

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* The English friends of the Union in Liverpool were few but hearty and practical in their sympathy They deserve to be held in grateful remembrance First we would mention the Vice Consul of the United States Mr Henry Wilding an able and efficient officer himself an Englishman He died a few years since Charles Edward Rawlins Ex President of the Chamber of Commerce Robert Trimble James Spence elsewhere mentioned in this article Charles Wilson William Inman of the Inman Line Steam ship Company William Crossfield Samuel Bulley Thomas Avison and the firm of Jevons & Ryley (Wm A Jevons Thomas C Ryley)

The American merchants who formed the Liverpool colony that were steadfast in their devotion to their country were Daniel James (of Phelps Dodge & Co) George Warren (founder of the Warren Steamship Company) Stephen B Guion (head of the Guion Line) B F Babcock William T Whittimore and Henry Nash

The Americans were in some sense in a state of siege surrounded by their enemies These earnest men brought private news of the success of the Union arms to the Consul and distributed correct information among the friends of the United States sometimes in the middle of the night otherwise all they would have known for at least two weeks were garbled telegrams and false reports Among the English the family of Mr Robert Trimble above mentioned made with their own hands and the help of their friends eight hundred garments for the freedmen of the South The determination of these few men headed by Mr Dudley and the colony in London led by Mr Adams was not without its influence being ultimately felt in England John Bright s remarkable speeches were followed by the sympathy of some of the most profound thinkers in Great Britain the disgraceful piratical proceedings of his fellow-Englishmen, and sends the Consul the following picturesquely descriptive note

"*Sir* —There is a steamer called the *Kirang Tung* in the Birkenhead Dock sails built and Guns on board, said to be for the *Chinese* and ready to sail any tide, she came from the same building yard as the *Alabama* and it may be worth your while to look after her She has two masts, wholly or partially brig rigged, two funnels painted light colour, black hull and light blue paddle boxes, built of iron with a ram bow . I don't side particularly with North or South but

"I am

"NO PRIVATEER'S MAN

"LIVERPOOL, 1 May, 1863"

A few of Mr Bright's letters are marked "private," but this the reader will readily see bears on the time and circumstance, which secrecy above thirty years' distance removes. They all do him the highest honor, and show that his political course and some of his important speeches, which considerably influenced the English people of the liberal sort, were probably to some extent owing to Mr Dudley's efforts to keep him correctly informed

"ROCHDALE, Dec 20, 1861.

"*Dear Sir* :—I am very much obliged to you for your kind letter, and I shall be very happy if anything I have said shall contribute to the preservation of peace

"There are two nations in England—the governing class and the millions who toil—the former dislike your republic, and their organs incessantly misrepresent and slander it—the latter have no ill feeling towards you, but are not altogether unaffected by the statements made to your prejudice I hope however that out of present perils we may see a bright future and a better understanding between your people and ours

"Yours very Sincerely,

"JOHN BRIGHT

"THOS H DUDLEY, Esq., U. S. Consulate,
Liverpool."

"LLANDUDNO, NORTH WALES, Oct. 18, '62

"*Dear Sir* :—I have ordered the Book of which you speak. I read Gasparin's first Book and thought it admirable.

"I know nothing of Gladstone's speech * except that on the American question it is discreditable to him, and calculated to do mischief He comes of a family long connected with slavery—and is now the minister in a country where aristocracy rules, and by which a republic is necessarily hated, and I suppose he takes the color of the atmosphere in which he moves.

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* Mr Adams wrote to Mr Seward from London, October 17, 1862, regarding Mr Gladstone's speech in much the same manner.

Mr. Adams says later in his letter · "The general opinion now is that he was very indiscreet. But I see no change in the current [of public opinion] Indeed nothing short of a very decisive victory in Virginia will avail to check it."

"The Proclamation [*] is a grand move not too soon, nor too late, in my opinion. It must have a good effect here in putting your enemies more and more in the wrong.

"During the winter as your forces get possession of Charleston, Savannah, Mobile and Vicksburgh the negro will learn everywhere who are his friends, and I can see no way of escape for the Conspirators but in working the 'Emancipation' lever for themselves. If they declare for freedom, they may give you a deal of trouble—but if they do not I think their whole basis of industry and power will crumble under them.

"Don't be unhappy about English opinion—there will be a reaction—and it is what you *do* in America, and not what people *think* here that will decide the contest [†]

"You offered to write to Horace Greeley asking him to send me the *Tribune*. I shall be glad to pay for it if he has an agent in Liverpool

"Yours very Sincerely,

"JOHN BRIGHT.

"THOMAS H. DUDLEY. Esq., U. S. Consulate,
Liverpool"

"ROCHDALE, Jany 26, 1863

"*Dear Sir* :—Thank you for the Book—I have read it through with much pleasure. I wish it may have a wide circulation in America and in England

"You may rely upon it that positive sympathy with the South is only to be found in our 'upper crust' and the rich middle class which largely 'flunkey' to it. The People, the millions don't hate America because of the republic—nor do they prefer the disruption of the Union to the abolition of slavery.

"I am sorry your Govt has not yet succeeded in clearing the great river—they seem generally to underrate the work they have to do—to attempt too many things at once. The retaking of Galveston shows great carelessness on the part of those in authority in the Gulf.

"I hope and believe we shall not hear much of recognition and intervention in the coming session, unless circumstances change for the worse with you

"The *Alabama* will be discussed in some shape The Govt. feel themselves in a difficulty about it. I should like to have all the facts of the case, and an hour's talk with you upon them before the meeting of Parlt., but I don't know whether such a thing can be arranged or not

"Yours very Sincerely,

"JOHN BRIGHT.

"THOS. H DUDLEY, Esq., U. S Consulate,
Liverpool."

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[*] The Emancipation Proclamation issued by President Lincoln, September 22, 1862.

[†] See footnote, p. 113.

"ROCHDALE, Jany. 30, '63.

"*Dear Sir*—It is possible I may come down to see you to-morrow morning if I can arrange it

"If I come I shall hope to see you between 10 and 12 o'clock—I must return in the course of the afternoon

"Yours very Sincerely,

"JOHN BRIGHT.

"THOS. H. DUDLEY, Esq., Liverpool"

"Private.

"ROCHDALE, April 22, '63.

"*My Dear Sir* —Thank you for the pamphlet. It makes me very angry to read the cases of the *Alabama* and the *Maury*

"I think Lord Russell will go on with the proceedings against the *Alexandra* Our Govt. is so much in favor of belligerents that it cannot disregard those international obligations to which it attaches so much importance

"They find it very difficult for the same reason to say anything against the seizures made by your vessels The owner of the *Peterhoff** told me that she was not a blockade runner, and had no contraband of war on board I hope if this be so, your prize court will soon liberate her It will be a great misfortune if any trouble arises out of any of the recent seizures.

"There is a special hostility to your Commodore or Admiral Wilkes and he should be careful to keep within the law I cannot be in the House on Friday night. I am kept here at present by domestic affairs and must leave the public to its fate

"There seems an increasing emigration to the States just now Can you tell me if an emigrant is, immediately on landing liable to the conscription, or only after a certain time of residence? Two men have just come back here fearing the draft, and I suppose many are deterred from going by fear of it.

"If your Govt. were to offer a free passage to 50,000 people from Lancashire, I think they might get them—they would be avenged on the cap-

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* The case of the *Peterhoff* is related in detail in *Appleton's Annual Cyclopædia* for 1863 under "Prize" She was captured by a United States vessel February 25, 1863, off the Island of St. Thomas. Upon her bills of lading she was bound "for off the Rio Grande, Gulf of Mexico, to Matamoras." Her clearance was from London to Matamoras She left London early in January, 1863 Her registered owner was an English subject Her cargo was laden by a large number of shippers, all of them British subjects, with the exception of one, who was a citizen of the United States and a resident of Texas at the breaking out of the war, and was a passenger on the vessel The portion represented by this passenger was more in value than half the whole.

It was shown by the character, of the army stores on board that they were "contraband of war," that the bills of lading gave a false showing as to the vessel's destination. The ship and entire cargo were therefore confiscated italists who have backed the South by making labor scarce and dear hereafter

"Yours very Sincerely,

"JOHN BRIGHT.

"T H. DUDLEY, Esq , U. S. Consulate,
Liverpool "

"[P. S] I wish I could get a copy of your *Homestead Bill*. I do not know what it is "

In an eloquent speech delivered at Birmingham, January 26, 1864, on "The Distribution of Land," recommending emigration to America, Mr Bright speaks in detail of the Homestead Act, which came into operation 1st January, 1863, and says "I have a copy of the Act here, and the circular, which was issued from the Department of State, giving direction as to how the Act should be worked throughout the Union" (p. 855, Rogers' Ed of *Bright's Speeches*, 1868)

"ROCHDALE, April 27, '63

"*My Dear Sir* :—Thank you for the Homestead Bill, &c. The Documents are very interesting

"The *Charleston* business is bad as was to be expected It appears to me that half a dozen people in your Govt do as they like—trying to do too much and failing almost in all If the Iron clads had been on the great river, perhaps they might have cleared it by this time—whereas neither one thing nor the other is done—I am afraid Banks is not up to his work at New Orleans—the whole power of the South is evidently in arms, all its force is given up to the war and therefore the contest is doubtful

"The speeches of Palmerston and the Solicitor General have given offense—naturally enough—I hope the seizure of the *Alexandra* will improve the tone in the States In the debate on Friday last, the Govt were mild enough, and Mr. Cobden's speech was excellent. It must do much good here.

"I am sorry for your 'heart sickness'—perhaps the clouds will break.

"I am always in trouble for your country—and whilst the contest lasts, I seem able to think of nothing else.

"Yours very Sincerely,

"JOHN BRIGHT.

"THOS. H DUDLEY, Esq., U S Consulate,
Liverpool."

"ROCHDALE, July 9, '63.

"*Dear Sir* :—I am not likely to be in town for some days—but I have sent your note and the extracts to Mr. Cobden and have urged him to see some of the members of the Govt. with a view to measures to stop the iron-plated ships. I did what I could before I left London Affairs in the States are very critical There seems a strange want of foresight and of force at Washington and I fear this has bred *disgust* and *hopelessness* among the People.

"Why pay and fight under Leaders totally incompetent to lead and win? Is not this a possible feeling?

"Again, has the Slavery poison gone so deep as to have polluted and enfeebled the free States that they cannot subdue the revolution which threatens to destroy them?

"History may answer this question—I cannot

"I have kept my faith till now—and I shall not part with it except as I should part with my life's hope.

"Perhaps another week or two may bring better tidings—I will hope still

"Yours very Sincerely,

"JOHN BRIGHT

"THOS. H DUDLEY, Esq, U. S Consulate,
Liverpool"

Among the curious miscellaneous correspondence of Mr Dudley relating to his consulate at Liverpool during the war of the rebellion, were a large number of letters from persons who stated they desired to enlist in the service of the United States They were sometimes very descriptive of the applicant and often original and amusing, showing considerable egotism and conceit. Many of these were undoubtedly written in good faith, while others were most likely written by spies and those who wished to entrap the American Consul in an offense against the laws of Great Britain. Most appear to have been written by Irishmen whose animosity to England is quite evident, and some were from those who had no real intention of joining the army of the United States, but desired to use this method as a means to obtain a free passage

We regret that we have not space to give a few of these to show the variety of men the American Consul had to deal with They have an historic interest as a picture of the times.

Many of these letters being from men then in Lancashire where the operatives were starving through the shutting off of the cotton supply for the mills by the blockade, will bring to mind the passage in one of the above letters of John Bright to Mr. Dudley, April 29, 1863, where he says: "If your Govt. were to offer a free passage to 50,000 people from Lancashire, I think they might get them."

Mr. Dudley was constantly subjected to insults and threatening letters, sneers, and social evidences with the plainest remarks of hatred for him as the representative of the United States. The flag at the consulate was often found with tin kettles and bricks tied to it as an object of contempt. On one occasion it is believed personal violence was intended in an assault at his own house Three men apparently bent on mischief rang his door bell and were so stern in their demands to see Mr Dudley that the servant was in an agony of fear but taking in the situation at a glance the Consul with prompt presence of mind quickly shut the door in their faces and bolted it It is believed they were armed and intended assaulting him His duties were therefore for the most part entirely new and without precedent requiring just such a man of more than usual executive ability promptness and decision of character not open to blandishments or bribes

In the biographical notices which appeared at the time of his death much has been said about his patriotic action in preventing the sailing of the numerous vessels fitted out not only at Liverpool but elsewhere to prey upon American commerce These general statements give no idea of the character of the work and its arduous as well as dangerous difficulties in all its intricate details in which Mr Dudley faithfully served his country To say that he was a sentinel at the most advanced outpost and in the midst of the enemy s country while it gives an idea of his constant watchfulness barely shows his actual encounter with the enemy Of the long list of vessels 824 blockade steamers reported by Mr Dudley 126 were either captured sunk or battered to pieces The mere mention of their names alone with that of fifty six sailing vessels engaged in the same piratical enterprise fill a column and a half in an ordinary sized newspaper The source from which this is taken gives some valuable details regarding twelve war steamers which Mr Dudley also reported and was instrumental either in stopping or embarrassing so effectually that except in one or two instances comparatively little harm was accomplished It was here that Mr Dudley s legal services were continually employed He was obliged to be constantly before the English officials with a mass of sworn evidence in regard to the hostile character and destination of these vessels obtained as best he could in a neighborhood where every obstruction was put in his way and spies constantly employed to watch his slightest movements and many who were willing to testify were deterred by the fear of social ostracism and loss of business Citations to appear were sent to him at the most inconvenient times He was obliged in self defense and in the service of his country to fight these persistent people with their own weapons By the authority of the President he had over one hundred spies employed and to guard against deception many of these were spies upon each other not a single one knew the name or identity of a brother spy Mr Dudley himself traveled *incognito* through the country and for three years there was not a keel laid in Great Britain without his learning the whole particulars within twenty four hours

Impressed with his work the President gave him extraordinary powers and every consulate in Great Britain with the exception of the single one in London, was placed under his supervision Even many of the American Consuls on the continent, who were not under his jurisdiction, repeatedly wrote to him for advice and instructions, in the new and trying situation they found the rebellion had placed them. The mass of correspondence alone, without mentioning the other work which this situation occasioned, is evidenced by a simple statement of the fact. The following interesting letter to Mr. Dudley from Captain Winslow, of the *Kearsarge*, describing the combat with the *Alabama*, was a fulfillment of the hopes of the little band of patriots resident in Liverpool, as well as of the American people. The engagement took place on June the 19th

"U S. Kearsarge, Cherbour, June 24, '64.

"*My Dear Sir* :—Your letter conveying congratulations with many of the same kind has been received I thank you in behalf of my crew and officers, for this evidence of the estimate you put upon the destruction of the *Alabama*. I think you will ere this reaches you find full particulars in the *Daily News* as Morse and the London Legation have written for them and a *Herald* correspondent has been on board

"You know I could not challenge the *Alabama* without violating orders I however got one from Semmes to wait until he was ready (a quite unnecessary request since he knew that was my business). The *Kearsarge* carried into action 160 men, 7 guns, 2 Dahlgren's eleven inch, 1 light rifle twenty eight pounder and four thirty twos The *Alabama* had eight, one more than the *Kearsarge*, consisting of 100 pounder rifle and heavy sixty-eight ditto, six thirty-two pounder guns. The *Alabama* had the coal bunkers filled, the *Kearsarge* was partly empty and her sides for twenty feet opposite the bunkers were hung with chains, stopped to eye bolts. This was done on board and the chains belonged to the sheet anchors and were put there as a sort of protection when the bunkers were out of coal

"The *Kearsarge* steamed several miles seaward to prevent the *Alabama's* getting back and dispose of all questions of jurisdiction Turning she started for close quarters with the *Alabama* and coming down received three broadsides of the *Alabama*, nearly raking [her] which it was necessary to get, to close in with her. No shot came on deck from this firing The action lasted one hour and two minutes, when [the] *Alabama* struck, and it was well for her, for she would have been most destructively raked.

"The *Kearsarge* had some 28 or 29 shot above and below, some 5 or 6 aft mainmast which were the best two shells in her chains on the side which were of no importance. One shot of 100 lbs. in her stern post remaining (bad shot this) The *Deerhound* ran off with prisoners, which I could not believe any cur dog could have been guilty of under the circumstances, hence I did not open on him.

"We landed of *Alabama*, 68 men, 3 dead, 17 wounded. Have 5 officers prisoners

"All twaddle about *Alabama's* firing going down. The vessel they say was a slaughter house, and when some of the men ran aft to prevent the flags being hauled Semmes took his pistol to blow out their brains—this is true and don t show there was any disposition to fire guns when sinking

We had 3 severely wounded The *Alabama* has here now 74 men and officers—3 dead making 77 of the number 18 are wounded—39 were landed (officers and men) in England making 116 in all Of the 116 left about 20 are wounded and they say some 40 lost killed and went down in the ship For want of means for providing I was compelled to parole all except officers

This is a memorandum of the whole story which I am sorry from the number of letters I have to answer that I cannot put in another shape

I remain with thanks very truly yours

JNO A WINSLOW

THOS H DUDLEY Esq U S Consul
Liverpool

Mr J C Bancroft Davis in his recent interesting work *Mr Fish and the Alabama Claims A Chapter in Diplomatic History* has ably set forth Mr Sumner s estimate of the damages inflicted on the United States by England and though we may agree with Mr Davis in his personal estimate of Sumner s character and ability and especially that such a statement of damages was undiplomatic and impractical as regards any pending arbitrations yet nevertheless we must allow that a large body of the American people felt that Mr Sumner truly stated our wrongs His was not an overestimate of the importance of these damages which are so far away they seem unreal to the present generation which unquestionably prolonged the war and produced the slaughter of thousands of our countrymen who died by English bullets fired from English guns for whose death England was responsible

Mr Davis quoting Mr Sumner s speech in the Senate upon the Johnson Clarendon Treaty for the settlement of the *Alabama* Claims says

Under the heading The Case Against England he [Sumner] said

At three different stages the British Government is compromised first in the concession of ocean belligerency on which all depended secondly in the negligence which allowed the evasion of the ship in order to enter upon the hostile expedition for which she was built manned armed and equipped and thirdly in the open complicity which after the evasion gave her welcome hospitality and supplies in British ports Thus her depredations and burnings making the ocean blaze all proceeded from England *which by three different acts lighted the torch* To England must be traced the widespread consequences which ensued What those widespread consequences were he set forth in detail under the heading The Extent of Our Losses He estimated the loss sustained by the capture and burning of American vessels at about $15 000 000 on the authority of a statistician The loss in the carrying trade he put at $110 000 000 Then he said that large as these losses were there was another chapter where they were larger far—'the national losses caused by the prolongation of the war and traceable directly to England,' and he clinched the statement by saying, 'If through British intervention the war was doubled in duration or in any way extended, as cannot be doubted, then is England justly responsible for the additional expenditure to which our country was doomed,' and he stated the cost of the suppression of the Rebellion at $4,000,000,000, thus leaving the calculation of this item plain to the youngest schoolboy."

"The feeling of hostility towards our country," Mr. Dudley said, "was not confined to one class, but pervaded all classes, the laboring and middle classes as well as the higher Of the entire population of England, nine out of every ten sympathized with the slave holders' Rebellion. I say nine out of every ten, deliberately I am aware there are those in England who entertain a different opinion, and assert that among the laboring classes of the country the majority were with the North. I do not think so, and am satisfied the proportions I have given are correct. . . .

"You can now understand how it was that this sympathy should become active and bear fruit in the recognition of belligerent rights to the rebels, in building them a navy, in fitting out cruisers to sweep our commerce from the seas, in furnishing arms and munitions to their army, and supplies to clothe and feed them You can also understand why one of the leading blockade runners, whilst mainly engaged in the blockade business, was elected Mayor of Liverpool, why John Laird could be elected to Parliament from Birkenhead by an increased majority, and why Sheffield, a leading manufacturing town, trading with the United States, would send Roebuck as their representative.

"The effect of all this was to prolong, to intensify and render more bloody the war Much of the blood that was spilt, much of the treasure that was spent, are justly chargeable to the Government and people of Europe who recognized the rebels as belligerents and gave them aid and comfort, and to this charge the people of England are especially obnoxious But for this recognition, the South could not have had a cruiser on the ocean, but for this active aid and sympathy she could not have armed her men, or fed or clothed them when in the field. It was the hope of intervention that buoyed up the South, and cheered them on in the desperate contest. It was this that supplied fuel to the flame and kept the fire burning. But for this, in my judgment, the war could not have lasted for a year, and the probabilities are that the ninety days given by Mr Seward for its termination would have witnessed the end, as he predicted "*

In 1867, the Government of the United States sent David A Wells to Europe for the purpose of investigating the questions of production and labor in England, France, Belgium and Germany Mr Seward, at the instance of the Secretary of the Treasury, detailed Mr. Dudley to accompany Mr Wells Of this appointment he says "I therefore have been in many of the manufactories of Europe and had an opportunity to study them and learn the wages and the condition of their working people *

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* See p. 11, *Proceedings at the Dinner Given by the Bar of New Jersey to Thomas H Dudley, Esq.*, Nov. 25, 1868, Newark.

Returning to this country on a visit in the latter part of 1868, the members of the New Jersey Bar gave a dinner to Mr Dudley on November 25, at Newark, in recognition of his distinguished services to the country at which the late Mr Justice Bradley, of the Supreme Court of the United States Senators Frelinghuysen and Cattell Chancellor Zabriskie Attorney General Robeson and many eminent persons were present Mr Bradley, introducing Mr Dudley, spoke of him as a Jersey lawyer, whose professional career had ever been marked by the greatest promptness assiduity and painstaking in the cause of his clients and whose unfaltering patriotism and sympathy for the principles which on our part lay at the bottom of the struggle, pointed him out as the man to be implicitly trusted And how well and nobly has he justified the confidence which President Lincoln reposed in him'" Mr Bradley also enumerated the numerous vessels captured, sunk and detained through his watchfulness

Mr Frelinghuysen, on this occasion spoke of the energy and perseverance with which Mr Dudley had stood by the interests of his country amid difficulties and discouragements of no ordinary kind and in spite of the social coventry to which in company with others from the North he was contemptuously dispatched during the progress of our civil war ' It is *something* " said he, "to do our duty when it is hard, and incurs the general opprobrium of those around, and honor should be given to him who faithfully performs his duty under such circumstances '

In 1871 Mr Dudley proceeded to Geneva to attend the Court of Arbitration there and to assist the Government in regard to the *Alabama* The English themselves appear to have been impressed with his character while endeavoring to controvert his important testimony concerning the *Florida* in the "Counter Case of Great Britain ' at the Geneva Arbitration We have the following (p 299) "The American Consul at Liverpool, whose activity in hunting for secret information appears to have been indefatigable," and again (p 301) "Mr Dudley though he appears to have been an intelligent and painstaking officer," etc In short we may say that the subject of this sketch possessed that staunch quality which is the admiration of the Anglo Saxon race all the world over, called "force

The testimony of another Englishman on another occasion is also worth recording Mr James Spence of the well-known firm of Richardson, Spence & Co, a citizen of Liverpool, said of Mr. Dudley 'My acquaintance with him commenced when he first came to Liverpool, and our friendship, I am happy to say, never varied He filled a very responsible and onerous position in most troublesome times, with much prudence and discretion with credit to himself, and benefit to his Government "

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*P 19 *Speech at Astoria N Y* Oct 23 1884.

In 1872, after his service at Geneva, he was appointed Assistant Attorney-General of the United States to settle certain claims against the Government.

The Consulate of Liverpool, being both famous and lucrative, was eagerly sought even during his incumbency, but no pressure of the many office-seekers could induce the Government to remove him, he was too valuable a man for the place At the time of his voluntary resignation in 1872, it is said there were no less than fifteen hundred applicants for the position He had before repeatedly desired to resign when the war was over, but was told, by Mr Seward, his services could not be spared, and begged to remain.

These are but a few of the incidents of national importance which occurred during his long sojourn of eleven years as Consul at Liverpool, they were closely interwoven with the history of his active life. Of minor importance were the opportunities the position gave him for social intercourse with his grateful countrymen, many of whom of the most distinguished character he entertained at his own house in Liverpool, of his frequent travels on the continent, and during this time his careful observation and study on the Tariff question gave him excellent and well-digested material for his numerous pamphlets on the subject written on his return, which are given in the bibliography below These were widely circulated throughout the country. We wish to call attention to three of considerable political interest; that written in Liverpool, the case of the *Alabama* contrasted with that of the *Maury* at New York during the Crimean War, which pamphlet excited John Bright's just indignation,[*] the able reply to Augustus Mongredien's pamphlet[†] on the Tariff, which passed through many editions, and was in one especially commended by a letter from Peter Cooper, and the last paper which he wrote, *The Three Critical Periods in Our Diplomatic Relations with England During the Late War*. This is different in style and subject from the others, a deeply interesting narrative from which a much better idea can be obtained of his career abroad than in any words we can give It is a paper of ability in its department equal though different from the others and gives rise to a melancholy regret that one who could write so well had not completed his story before death called him away

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[*] In his *Three Critical Periods in Our Diplomatic Relations with England During the Late War*, Mr Dudley (p 17) says "During the Crimean War in 1855, Mr Barclay, the English Consul at New York, wrote Mr Crampton, the English Minister at Washington, that he had reason to believe that the barque *Maury* was being fitted out in New York as a cruiser for Russia against England Mr. Crampton wrote to the Secretary of State, Mr Marcy and he communicated with Mr Cushing, the Attorney-General, who directed the United States District Attorney at New York to take immediate steps for the detention of the vessel, and this was done In 1838, during the Canadian Rebellion, the United States, at the instance of England, passed a special Act of Congress to prevent our people from aiding the Rebellion I prepared a pamphlet, containing the correspondence in the case of the *Alabama* and the barque *Maury*, and the special Act of Congress just referred to, to show the difference between the United States and England in enforcement of neutrality. I sent a copy of this pamphlet to all the members of the House of Commons, the leading members of the House of Lords and many of the prominent people in the kingdom. The English Government, in a dispatch dated September 25, 1863, addressed to Mr. Adams, refused to pass a new law to preserve its neutrality"

[†] The *Western Farmer of America*, by Augustus Mongredien, author of *Free Trade and English Commerce*. Cassell, Potter, Galpin & Co, London, Paris and New York All rights reserved, 1880. 12mo, pp. 80 The second title page has the seal of the Cobden Club.

On his return to his native country in 1872 he purchased an estate The Grange near Camden and built a handsome house upon it Here were frequently entertained perhaps the most distinguished company of men ever gathered together in West Jersey General Grant while President with his family also passed the day there on one occasion

In The Report of the New Jersey Commissioners on the Centennial Exhibition * it is said of Mr Dudley who had been appointed on the Board of Finance in 1873 that he represented New Jersey with great assiduity and ability This important office was one which required constant attention for several years

From this time he was actively engaged as President of the Agricultural Society of New Jersey President of the Pittsburgh Titusville & Buffalo Railroad and of the New Jersey Mining Company a Director in the Camden & Atlantic Railroad the West Jersey Railroad the Camden & Philadelphia Ferry Company and of the Peoples Gaslight Company of Jersey City first Vice President of the American Protective Tariff League etc and President of the Bar Association of Camden

On March 22 1886 he was elected to membership in the Historical Society of Pennsylvania In the American Philosophical Society he was a member of the Council in the years 1887 1890 and 1893 also serving on numerous committees In these two societies he was an active member and must have held membership in others which are unknown to us

In short his activity towards the end of a life of earnest work from his early youth at a period when most men begin to show signs of age was remarkable During this time he wrote the numerous pamphlets whose titles we have given and articles for the newspapers besides taking part in political campaigns making many speeches in his own State in Pennsylvania, New York and Virginia in behalf of the Republicans

His death in the seventy third year of his age was most unexpected and sudden He was in such good health that he accepted an invitation to respond to a toast to be given on April the 25th to the Minister to Germany A few days previous seemingly strong and vigorous, early in the morning of April 15 1893 arriving at the Broad Street Station, in Philadelphia he died almost instantly from an attack of heart failure He was buried at Colestown Cemetery, near Moorestown where repose the remains of his wife and infant son and of many of his old friends and neighbors This spot was his own choice for he was greatly attached to early associations which seemed strengthened by a long absence from home and a participation in stirring scenes abroad The

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* Trenton 1877 p 44

Grand Army of the Republic of this district asked permission to place the flag upon his grave and to decorate it with flowers on Decoration Day, for they said he had served his country as faithfully as a soldier.

The immense fleet of vessels carrying arms and munitions of war which, through his instrumentality, were stopped or rendered harmless, and the fifteen million of the *Alabama* claims acquired largely through his vigilance and prompt evidence, and information of great value conveyed to the home Government, make his claims on his country's gratitude equal to those of a great general.

To sum up his personality, "Every one," says Cervantes, "is the son of his own work." His face, full of energy and decision, bore the impress of his life. In person he was tall, in dress and habits simple.

One of Mr. Dudley's biographers* gives a truthful account of some of his traits in the following: "Deeply religious in the Quaker sense, which makes each man alone responsible to his Maker and not to conventional ceremony, he was more spiritual minded than a practical prosaic lawyer and man of affairs would be taken to be, but never wore his heart upon his sleeve save to familiars. Hated by many through the prejudice and misconception engendered in political strife [as strong characters often are], misunderstood by many more because he would not stoop to conquer, he pursued the even tenor of his way in the respect and love of his confidants. Rarely heading public subscriptions, he was instant in good ways and works, and most of his generous benefactions were only known to the needy recipients."

An eminent member of the Bar of New Jersey† who knew him well thus describes him: "He was, as a lawyer, distinguished for the absolute devotion to the cause of his client with which he conducted his cases, no difficulty daunted and no obstacle deterred him. He persevered with indomitable energy and unceasing assiduity until his object was attained."

We close this sketch with a tribute to the character of Mr. Dudley from one for whose sound judgment we have the highest respect—the venerable Frederick Fraley, the President of this Society.

"No 1000 WALNUT ST., Sept 27, 1893.

"*My Dear Sir*:—I owe you an apology for not writing a reply to your letter relative to my acquaintance and friendship with our mutual friend Dudley.

"I find by reference to the minutes of the Centennial Board of Finance that he was elected a Director of that body in December, 1873. I then became personally acquainted with him, although I had known him by reputation as a great and useful man during our unhappy Civil War. My intercourse with him from 1873 until the date of his death was characterized by frequently meeting with him, participating in the work of the Centennial, and in many ways making our friendship of the strongest kind.

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* H. L. Bonsall, in *The Post*, a daily paper of Camden, April 15, 1893.

† Mr. Samuel H. Grey.

"I had learned a great deal from him of the thrilling events which took place during his holding the Consular office in England and I also had opportunities for testing the value and extent of the information he possessed of economic and business questions His death was a severe blow to me, and unexpectedly severed the ties which had bound us together for nearly twenty years

'He spent a morning with me and my family a few days before his death, and we were all wonderfully impressed with his kindly manners and the interest which he gave on that occasion to our Sunday morning gathering

"This made for him with us a glorious sunset for such a life and I am truly thankful that I was permitted to have such a friend

"Sincerely yours,

' FREDERICK FRALEY

' WM JOHN POTTS Esq
Camden, N J

BIBLIOGRAPHY

1 Correspondence Respecting the *Alabama*, also Respecting the Bark *Maury* at New York During the Crimean War and The Temporary Act of Congress Passed by the United States at the Instance of Great Britain, in 1838 to Meet the Case of the Rebellion in Canada [1862] 12mo, pp 56 (This contains several letters by Mr Dudley and others relating to the *Alabama's* history which are extremely important)

2 Proceedings at the Dinner Given by the Bar of New Jersey to Thomas H Dudley, Esq , November 25, 1868 Newark Printed at the *Daily Advertiser* Office 1868 8vo, pp 18 (This contains the speech of Mr Dudley, etc See pp 4 to 16 inclusive)

3 Protective Tariff and Free Trade By Hon Thomas H Dudley (late United States Consul to Liverpool) Printed by J B Lippincott & Co , Philadelphia, 1880 12mo, pp 18 (Apparently the first edition This is in the form of a letter to "Charles Edwin [*sic*] Rawlins Esq , Liverpool," dated Camden, N J , January 20, 1880)

4 Protection or Free Trade for the United States of America? Discussed in Two Letters between the Hon Thomas H Dudley Ex-United States Consul to Liverpool, and Charles Ed Rawlins, an Ex President of the Chamber of Commerce, Liverpool *Audi alteram partem* Second Edition, 1880 12mo, pp 29 The Argus Printing and Stationery Company, Limited, 31 Dale Street, Liverpool

5 Please Read and Circulate Reply to Augustus Mongredien's Appeal to the Western Farmer of America, Showing the Prosperity of America under Protection and the Decline of England under Her So-called Free Trade System By Hon Thomas H Dudley (late

United States Consul at Liverpool) 12mo, pp 48. Printed by J. B. Lippincott & Co., Philadelphia, 1880.

6. Tariff Tract No. 12, 1880 Published by the American Iron and Steel Association at No. 265 South Fourth street, Philadelphia, at which place copies of this tract may be had free, for distribution, on application by letter

   Protection to Home Industry Shall England Interfere in Our Elections and Make Our Tariff Laws for Her Benefit? Reply to Augustus Mongredien's Appeal to the Western Farmer of America. By the Hon. Thomas H Dudley, of Camden, N. J (late United States Consul to Liverpool) 8vo, pp. 24. (Appears to be a reprint of No. 5)

7 Errors and Appeals. Edward Dudley *vs.* Camden and Philadelphia Steamboat Ferry Company, in Error, Etc Thomas H. Dudley, Counsel 12mo, pp 18. (One of the so called "paper books," printed in 1882, probably.)

8 Court of Errors and Appeals. Benjamin F. Davis *vs* the Township of Delaware, in Error Brief of Plaintiff in Error. Thomas H. Dudley of Counsel for Plaintiff in Error [No date] 12mo, pp 16 ("Paper book.")

9 The Farmer Feedeth All. How Protection Affects the Farmer. An Address Delivered before the New Jersey State Agricultural Society, at Waverley, September 22, 1882 By Hon Thomas H Dudley, Philadelphia Allen, Lane & Scott's Printing House, Nos 220–231 South Fifth Street [Phila], 1882. 8vo, pp 16. (This was also printed by the Republican National Committee, campaign of 1884, Document No. 4)

10. Please Read and Circulate. Copies may be had by addressing Thomas H. Dudley, Camden, N. J Reply to Augustus Mongredien's Appeal to the Western Farmer of America, Showing the Prosperity of America under Protection and the Decline of England under Her So-called Free Trade System By Thomas H Dudley (late United States Consul at Liverpool). With Peter Cooper's Letter Endorsing the Same. 8vo, pp. 48. Allen, Lane & Scott's Printing House, Nos. 229–231 South Fifth Street [Phila.], 1883 (A note on the second page of the cover says, giving a letter from Peter Cooper, of New York "This endorsement of Mr Cooper's and the pamphlet of Mr. Dudley's were published in the *Justice*, of New York, and *National Farmer*, of Washington.")

11. A Reply to Kersey Graves' Comparison between Protection and Free Trade in the United States. By Thomas H Dudley (late United States Consul at Liverpool). [1883] 8vo, pp 11

12 An Address Delivered Before the New Jersey Board of Agriculture, February 6, 1883. By Thomas H. Dudley, President. Printed by Order of the Board of Agriculture, Camden, N. J. 8vo, pp. 16. The Milliette Printing Rooms, No. 21 Federal Street.

13 The Cobden Club of England and Protection in the United States A Speech Made at a Republican Meeting Held at Astoria New York October 23 1884 By Thomas H Dudley of Camden N J (late United States Consul at Liverpool, England) 8vo pp 32

14 Competition of India Wheat Cause of Decline in Price to Supersede American in English Market The Remedy From Address Before the State Board of Agriculture of New Jersey February 8 1885 By Thomas H Dudley President (late Consul at Liverpool) 8vo pp 14 Camden N J S Chew Printer Front and Market Streets 1885

15 Address of Thomas H Dudley President of the State Board of Agriculture Delivered before said Board at Trenton February 2 1886 8vo pp 16 Camden N J S Chew Printer Front and Market Streets 1886

16 Is There Reciprocity in Trade? And the Consumption of Manufactured Commodities By Thomas H Dudley Read before the American Philosophical Society October 1 1886 8vo pp 9

17 Which is Best for the Farmers Protection or Free Trade? An Address before the Agricultural Society of Lancaster County Delivered at Lancaster City Pa February 7 1887 By Thomas H Dudley of Camden N J Answer to Col Beverley of Virginia and Hon Frank Hurd of Ohio 8vo pp 24 (Issued by the American Protective Tariff League)

18 The Farmers and the Tariff A Speech Delivered at the Meeting of the Farmers Congress at Chicago November 11 1887 By Thomas H Dudley of Camden N J 8vo pp 16 Philadelphia Allen Lane & Scott s Printing House 1887 (Reprinted as a campaign document in the *Defender* New York July 2 1892)

19 How Abraham Lincoln was Nominated An Article in the *Century Magazine* for July 1890 Reprinted in *The Bulletin of the American Iron and Steel Association* Philadelphia July 16 1890 No 26

20 Letter on Agriculture as Affected by the Tariff *North American Review* pp 2

21 What is Protection? Symposium for a New York paper Signed at the end Thomas H Dudley Camden August 30 1890 12mo pp 2

22 A Comparison between England under Free Trade and the United States under Protection By Thomas H Dudley (late United States Consul at Liverpool) 8vo pp 8 Philadelphia Allen Lane & Scott s Printing House 1892

23 Three Critical Periods in Our Diplomatic Relations with England During the Late War Personal Recollections of Thomas H Dudley Late United States Consul at Liverpool Reprinted from the *Pennsylvania Magazine of History and Biography*, April 1893 8vo, pp 22

SUPPLEMENTARY

The following valuable letter was received to day (May 10), too late for insertion in the foregoing, and as it forms an historical paper of especial interest, written by one of the last three survivors of the Emancipation Society of Liverpool's Committee of Twenty-five, the Honorary Secretary Col. Robert Trimble, now of Taranaki, New Zealand, who has been a member of Parliament there, and has held numerous political offices, it is an excellent supplement to the foregoing. The letter is addressed to Mr Thomas H. Dudley's sister-in-law, Miss Matlack

Col. Trimble was the author of several pamphlets explaining and sympathizing with the action of the North, which we give in a footnote *

W J. P

"INGLEWOOD, TARANAKI, NEW ZEALAND, April 18, 1895

"*My Dear Miss Matlack*:—Mrs. Trimble has passed to me your letter of February 24 to be answered I need hardly say that I am glad that Mr Dudley is to have a fitting biography. Upon it could be grafted a whole history of the exterior attitude of the United States The work passed over to Mr. Dudley was to all appearances overwhelming, and was without precedent for guidance. It looked many a time as if he would break down, so heavy were the odds. A passionate love for his country, and a temper singularly equable, carried him over or around all his difficulties

"I now, in accordance with your request, send you a few memories of men and movements, looking tame enough now, after the lapse of over thirty years, but once instinct with life and redolent of human hopes. Nor was fear wanting During the great epic struggle between the powers of light and of darkness there were times when it almost seemed as if the darkness had won. Hence we used to say, 'We do not say the North shall win, but we say it ought to win '

"Never during the tempest did Mr. Dudley despair of the State The news was sometimes cruelly bad, but he always carried a head erect and a heart undaunted.

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* *Slavery in the United States of America*. A Lecture delivered in Liverpool, December, 1861, by Robert Trimble.

The Negro North and South. The Status of the Coloured Population in the Northern and Southern States of America Compared By Robert Trimble

Popular Fallacies Relating to the American Question. A Lecture delivered in November, 1863, by Robert Trimble 12mo, pp 36.

A Review of the American Struggle in the Military and Political Aspects, from the inauguration of President Lincoln, 4th March, 1861, till his reëlection, 8th November, 1864. By Robert Trimble. 12mo, pp. 48.

The Present Crisis in America, by Robert Trimble. 1865. 12mo, pp. 10.

These pamphlets were printed, London. Whittaker & Co., Liverpool Henry Young, Manchester. Abel Heywood & Son.

I will now proceed with my discursive narrative Previous to President Lincoln s Proclamation in favour of certain forms of Emancipation which was to take effect on first of January 1863 there was a very general feeling throughout England that the war between North and South was not likely to issue in the abolition of slavery if the North proved victorious The British people are not as a rule well informed upon matters taking place abroad and are therefore at times liable to make serious mistakes When the Southern partizans proclaimed that their object was to get rid of the Protective System in the Tariff and the Northern orators and writers kept dinning that the sole object of the North was to keep intact the Union the people of this country were dazed They could not understand the nice distinctions of lawyers as to what was Constitutional and what was not When it was argued that the whole tendency of the war made for freedom and at the same time that the authorities could not constitutionally enact emancipation by a vote of Congress a shrug of the shoulder sufficiently showed incredulity When however, President Lincoln issued the Proclamation above referred to it had an instantaneous effect and the friends of the United States were able to speak and write with a confidence they never before had experienced It is true that in the north of England and particularly in Lancashire there was a strong feeling that the action of our government should in no way be twisted into a support of the Slave States and from the time of the sailing of the *Alabama* in August 1862 this feeling rapidly assumed a definite shape When therefore the President s Proclamation reached England the friends of Emancipation saw that the time for united action had come This was recognized in Manchester sooner than in Liverpool and this was natural for Manchester was filled with workingmen who had proved by their conduct all through the struggle that they held that man was not to live by bread alone In the midst of want they stood firmly by their convictions In Liverpool on the other hand the cotton trade was predominant Men on change' were unmistakably Southern' in their proclivities that is the majority of them The mere rabble took the same side All that these could understand was that whereas they formerly earned a comfortable living in handling imported cotton they were now idlers living on the rates or depending upon very precarious employment To them cotton was still king The Emancipationists in Manchester had the masses to aid them and they therefore took action first by establishing an Emancipation Society In Liverpool the rich and the lowest were acting together whilst the great body of shopkeepers and the handicraftsmen were favorable to the North Of course these classifications must be taken as only approximately accurate

Such was the state of feeling in Liverpool when an advertizement appeared in the newspapers calling a meeting to assemble in the 'Clarendon Rooms,' early in the afternoon of the 17th January, 1863 I was present and was surprised to find so many influential merchants in attendance. Not knowing many of them, I guessed that the South was largely represented, and that not unlikely sympathy with the North would be a minus quantity. The chair was taken by Mr John Cropper, a man deservedly respected in Liverpool and far beyond, for his deeds of benevolence I think it was Mr Robertson Gladstone (elder brother of Mr. William E Gladstone) that moved the following resolution

"'That in the opinion of this meeting the war now raging in the United States of America originated in the institution of slavery and in the antagonism which that system inevitably presents to the institutions of freedom, that in the great national crisis now created by the announcement of the Emancipation policy, the Federal Government is entitled to the generous sympathy of every Englishman, and to the moral support which such sympathy always affords, that to ensure these from the inhabitants of Liverpool it is now deemed advisable, by means of lectures and public discussions, to fully instruct the public mind on the true conditions of the American question, preliminary to a general aggregate meeting for the adoption of an address to President Lincoln'

"A debate of an interesting character sprung up Mr James Spence,[*] the S of *The Times* and author of *The American Union*, was present, and in eloquent terms denounced the hypocrisy of the North and praised the chivalry of the South. Slavery was pronounced 'scriptural' and 'patriarchal,' and poor Onesimus was trotted out once more to prove that injustice is the very highest form of justice He sat down with an air of triumph which I can never forget. Applause was loud and continuous Before it was over a man that I then only knew by name, but knew intimately ever after, was on his feet waiting for attention Mr. Spence was a dainty-looking little man, with a pleasant voice and graceful presence The man about to reply (John Patterson by name) was a burly Ulsterman with loud voice and energetic action As soon as Mr Patterson got a hearing he took a little Bible out of his pocket and first addressed himself to the task of answering the Scriptural arguments of Mr Spence. He made the house ring with denunciations of man stealers and of oppressors of the poor. The year of jubilee was not forgotten—in fact, the little pocket-Bible had the effect of a gigantic bomb shell. Neither before nor since have I heard so able an *ex tempore* rejoinder There was no occasion for further discussion. The resolution was put and carried almost unanimously An Emancipation Society was founded and a committee formed to carry out the objects of the resolution On the motion of our old friend, Mr. C. E Rawlins, I was asked to be Honorary Secretary, and thus came my official connection with the Society which lasted till the end of the war.

"As you wish to know the names of those most active amongst us, I give the names of the Committee as follows reserving a few words to be said about two or three of them afterwards

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[*] [A different person from the James Spence of the firm of Spence, Richardson & Co, of Liverpool, whom we have mentioned elsewhere in the foregoing article, a strong friend of the United States.—W. J P.]

Rev J S Jones
Hugh S Brown
Charles M Birrell
John Robberds
Mr John Cropper
I B Cooke
Denis Daly
Robertson Gladstone
James R Jeffery
John Patterson
Charles F Rawlins
Charles Robertson
Richard Sheil

Mr John Turner
T R Arnott
Peter Stuart
David Stuart
George Golding
Robert Varty
Andrew Leighton
E K Muspratt
Maurice Williams
William McGowan
Charles Wilson
Robert Trimble

Besides the above named there were many others that both worked hard and subscribed liberally to our objects such as the late William Crosfield and his two sons Thomas Ellison S Bully etc

The committee lost no time in beginning its work In every district of the town meetings were held preparatory to a great central demonstration at the Amphitheatre We were followed everywhere by paid organizers of disorder but notwithstanding this opposition we carried our resolutions at every meeting including that at Birkenhead

On Thursday evening 19th of February we held a great meeting at the Amphitheatre where we had much organized opposition but all our resolutions were carried We had many other occasions for demonstrations and plenty of private work It is a remarkable fact that our opponents never had a public meeting from the opening of the war till the end

Perhaps I ought to say something of the meeting to hear Mr Beecher but the truth is I had no faith in its success and although we carried our resolutions by overwhelming majorities yet I think it did us no good He did not understand his audience and was too bumptious

You ask about garments made for the fugitive negroes by my wife and other ladies I have no particulars of the work done I have a memorandum written on one of my pamphlets showing the final result of the efforts for the Freedmen and I have the original subscription list somewhere I saw it quite recently amongst some papers but for the moment cannot find it The figures are

Cash subscriptions . .	£2170 2s 0d
Computed value of clothing	862 19 9
Total	£2533 1s 9d

"After the war closed I thought we might get up a fund of £10,000, but on the advice of Mr. Dudley I dropped the idea. Some time afterwards a gentleman called upon me one morning with a note from his father enclosing £30 to be given to certain American travelers if I thought well of it. The son said that if I thought it desirable, his firm would give £1000 to begin a subscription worthy of the town. I sent once more to Mr. Dudley, giving him in confidence the name. After mature thought, he again gave an opinion similar to that he had given before. Neither of these gentlemen had joined our agitation.

"With regard to Mr. Dudley's eleven years' work in Liverpool, I would like to say that I had the good fortune to enjoy his friendship from the middle of the war until he resigned his office of Consul, and can say that he was an indefatigable worker, though all the time labouring under great physical disabilities. He kept a strict watch upon the enemies of the United States, and at the same time was urbane to all who had any business at the consulate. When the full history of that revolutionary period comes to be written his name will be found amongst the most honourable.

"A life perhaps too busy has prevented me from keeping documents concerning passing events, but what I have here written is from memory aided by some odds and ends and preserved letters. I have purposely abstained writing about war ships, blockade runners, confederate bonds and so on, as, if I began, it would require volumes to finish the story. In hunting through old papers in the last few days I find I have still a pretty complete set of my letters exposing the celebrated cotton loan. I am glad to think that the eventual sufferers were not unwarned both from the commercial and the moral side.

"My pamphlets are out of print, so I cannot send you a set, but I find I have a few copies of the three latest and I send you two of each of them.

"You ask for a few incidents which might prove interesting. I have given you one about our old friend, John Patterson, but now recall his name to say that he kept full reports of every meeting held, and all published correspondence that he noticed. I dare say his family has them.

"Charles E. Rawlins wrote the best book brought out amongst us. It is called *American Disunion*. It was published in April, 1862. It has only one fault. He shows himself quite too charitably disposed to his opponents, but that was his constant characteristic. You may have the book in your library.

"Thomas Ellison, a cotton broker, wrote a book called *Slavery and Secession*. It was published just before that by Mr. Rawlins.

"The Rev. J. S. Jones was remarkable for his broad sympathies. He was very 'high church' in his views, but he visited, preached in, and lived in the vilest part of Liverpool, and at a nominal salary. I believe he has now similar surroundings in London. He stood second to none amongst our friends.

"The Rev. Charles M. Birrell was a leading Baptist minister, and joined us on account of the moral aspect of the question at issue. He spoke at our Amphitheatre meeting. He was a very retiring man, but he was roused to vehemence when the mob tried to howl him down. I can never forget the close of his speech. He said that in the old anti-slavery agitations he had stood in the same place and had to face a similar hostile multitude, and then rising to his full height, his face aglow, and lifting his right hand towards heaven, he said, 'We conquered then and we will conquer now.' He touched a chord that vibrated throughout the vast assembly.

"A word or two about Charles Wilson, and I have done. He was a veritable 'Fighting Quaker,' if ever there was one.

"He was Chairman of our Executive Committee, and to him was largely owing the aggressive attitude assumed at the beginning and continued till peace was proclaimed With all this never man could be more reckoned upon to keep his temper. His services to the cause were beyond praise.

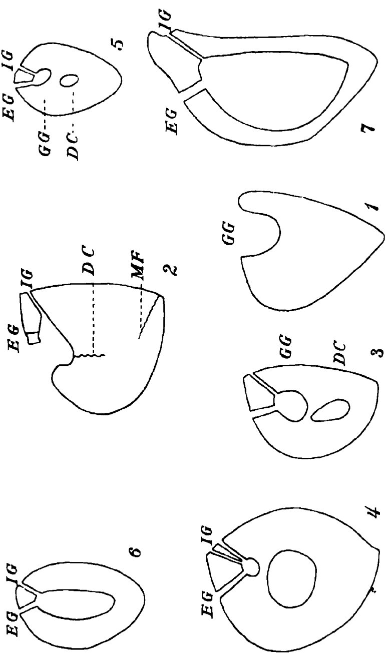
"Perhaps it looks a little insidious to pick out a few, out of many friends, for special mention, but these were serviceable above measure

"Of the twenty five members of the committee as already given in list, I believe twenty-two have gone to their rest—their work done. I believe I am right in stating that Messrs Jones, Muspratt and I, are the last survivors; and of Mr Jones, I am not quite sure as it is a dozen years since I have heard of him.

* * * * * * * * * * * * * * *

"I remain, my dear Miss Matlack,
"Yours sincerely,
"ROBERT TRIMBLE.

"MISS MATLACK, The Grange,
Camden, N J"



Sections of Mandibular Rami of Balænidæ

Fourth Contribution to the Marine Fauna of the Miocene Period of the United States

By E D Cope

(Read before the American Philosophical Society April 5 1895)

The three preceding Contributions appeared in the *Proceedings of the Academy of Natural Sciences of Philadelphia* for the years 1867 1868 and 1869 respectively Their subject matter is almost exclusively confined to the description of the remains of Cetacea which occur in the marine deposits of middle Neocene age of the Atlantic coastal region and more exactly in the Yorktown formation of Dana or the Chesapeake formation of Darton and Dall The present paper continues the description of these forms preliminary to an illustrated memoir on the subject The word marine has been introduced into the title to distinguish the series from the numerous papers which have appeared on the paleontology of the lacustrine neocenes of the West For the sake of uniformity the term Miocene is retained

PHYSETERIDÆ

PARACETUS MEDIATLANTICUS sp nov

The genus Paracetus has been recently proposed by Lydekker* to include members of this family which possess a well developed series of teeth in the (?) premaxillary and maxillary bones It is up to the present time represented by one species the *Paracetus pouchetii* Moreno of the Santa Cruz bed of eastern Patagonia of the district of Chubut The present species is apparently not distantly related to that one

This genus stands near to Cogia Gray and can scarcely with present information be referred to a distinct family The presence of superior teeth cannot alone be regarded as necessitating this course as they occasionally occur in Cogia Thus in *O sima* Owen from the coast of India there are two teeth at the anterior extremity of the upper jaw and a male of a rather small species preserved in the U S National Museum from the eastern coast of the United States exhibits the same character † A male in the Museum of the Wistar Institute of the University of Pennsylvania‡ from the coast of New Jersey at Sea Isle City has no teeth in the upper jaw The genus Paracetus seems to me to be only distinguishable from Cogia by the posterior extension of the tooth series to the posterior part of the maxillary bone Perhaps when the skeleton is known other characters will be detected

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* *Anales del Museo de la Plata Paleontologia Argentina* II *Cetacean Skulls from Patagonia* p 8, Plate iii

† For the opportunity of examining this specimen I am indebted to Dr Goode Director of the Museum

‡ My thanks are due to Prof Horace Jayne Director of the Wistar Institute for the opportunity of studying this specimen.

The name of this genus is stated by Dr Lydekker in the text of his description to be as I have cited but the name Hypocoetus stands at the top of the paragraph in which this statement is made and is also attached to the plate in which it is figured I have followed Dr Lydekker s expressed intention rather than what may be a *lapsus calami* or other mistake

Char specif — As the posterior border of the skull and the extremity of the muzzle of the specimen are broken off an exact idea of its outline cannot be given However the form was probably much as in the *P pouchetii* and more elongate than in the species of Cogia This form is subtriangular with the basal border convex and the two lateral ones slightly concave The muzzle is probably however produced into a rostrum as the maxillary borders are parallel at the point where it is broken off On the right side where the maxillary bone is best preserved there are eight alveoli the teeth are lost The lateral border of the maxillary bone overhangs the tooth line considerably in front and spreads away from it outwards and backwards in a gradually thinner edge to the deep notch which bounds the supraorbital region anteriorly The rise of the anterior border of the facial basin is within this notch and not without it as in the species of Cogia and is gradual attaining a considerable elevation immediately in front of the temporal fossa and a little within the vertical plane of the supraorbital border The premaxillary bones are separated by the deep vomerine channel which they partially overroof on each side and are separated posteriorly by the prenarial part of the vomer posteriorly The latter forms an elevated crest directed forwards and unsymmetrically to the right The premaxillaries spread gradually outwards posteriorly to a thin margin and are concave opposite to the vomerine crest which separates them that of the left hand descending to the nareal orifice The skull is broken off at the blow holes so that it is difficult to affirm positively whether the right blow hole existed or not It was apparently present but smaller and posterior in position to the right one The inferior surface of the maxillaries slopes upwards and outwards leaving the inferior face of the vomer quite prominent below The vomer forms the half of a circle in transverse section above and extends as far anteriorly as the specimen extends

There is a large supraorbital foramen between the preorbital notch and the rising edge of the facial crest as in the sperm whale and there is a smaller one in a direct line posterior to it just exterior to a more elevated part of the crest within a line above the posterior part of the supraorbital border A longitudinal groove anterior to the supraorbital foramen is pierced in its fundus by two foramina Anterior to the groove a depressed foramen pierces the maxillary bone near the premaxillary border Anterior and interior to the corresponding foramen of the left side a depressed foramen pierces the premaxillary bone This foramen is absent from the right side In the other hand the right premaxillary is pierced near the anterior part of the vomerine crest by a large round foramen, which is wanting from the left side A large foramen pierces the inner side of the lateral crest half-way to the superior border, and opposite the middle of the left blow hole

The dental alveoli are subround, and are separated by narrow septa They are not deep, the deepest equalling 50 mm, so that the teeth have been easily lost.

Measurements.

	M.
Length of fragment on middle line	.600
Width of skull at supraorbital notch, left side restored	.800
Width of muzzle where broken off	172
Width of right premaxillary at middle of length	.100
Width of left premaxillary at middle of length	150
Width of right premaxillary at vomerine keel......	.100
Width of left premaxillary at vomerine keel....... .	170
Elevation of lateral crest above orbit (apex broken off)....	310
Length of series of eight teeth	.105

From Drum Point, Chesapeake Bay, Maryland.

CHONEZIPHIIDÆ

Ziphiinæ Flower, *Ziphiidæ* Gill (*Ziphius* preoccupied)

PELYCORHAMPHUS PERTORTUS, gen et sp nov.

Char. gen.—Allied to Choneziphius, but the solid rostrum of the vomer bifurcates posteriorly and embraces a basin which takes the place of the maxillary basin of the right side, and reduces that of the left side to very small dimensions. Blow-holes very unsymmetrical, the left only preserved in the specimen.

This genus has certain characters which ally it to the Physeteridæ The internareal part of the vomer is directed very obliquely upwards to the left, and then forwards to the left on the superior surface for a distance, when it turns to the right as in Paracetus and Cogia Instead of terminating at this point as in those genera, it assumes the swollen form and dense structure seen in the species of Choneziphius, and besides sending forwards the usual rostrum on the median line, it continues to the right, and apparently spreads out into a thin plate which forms the floor of a wide basin, and which apparently continues to and forms its right border, overlying the posterior plate of the maxillary. This basin is represented in *Paracetus mediatlanticus* by a longitudinal shallow concavity of the right side of the superior keel of the vomer, which is a rudiment as compared with the basin in the present genus The rostrum of the vomer extends to the narrow extremity of the specimen, where it is broken off. The fracture exhibits no tube or channel.

It would not be surprising if this genus should prove to be related to Anoplonassa Cope which has the long symphysis mandibuli of the Physeter with the nearly edentulous character of the Choneziphiidæ

Char specif—The species is founded on a rostrum similar in its mode of preservation to Ziphioids in general Nothing is preserved posterior to the nares and the edge of the left maxillary with the end of the muzzle, is broken off All the parts are coossified

The anteroposterior diameter of the basin exceeds by a little the transverse The bottom is nearly regularly concave with a few shallow fossæ at the right side The part of the median vomerine ridge which forms the anterior half of the left border of the basin is thicker than that which bounds the posterior half of the same and it presents an angular tuberosity horizontally to the left The fractured edge of the left maxillary shows that it was thin at this point and at no point had it when perfect any considerable horizontal extension to the left side It is separated from the vomerine ridge by a groove which extends from the left maxillary basin to a foramen which is situated at a point in advance of the greatest width of the vomerine rostrum A corresponding foramen exists on the right side, which is opposite the anterior border of the central basin The vomerine rostrum contracts rapidly forwards forming a prominent rounded ridge and the premaxillaries rise to it on each side The maxillaries are little expanded and their superior surface is subhorizontal and is moderately rugose It is much thicker on the right side than on the left and is probably also wider on the right side On the left side it is bounded below by a deep groove from opposite the anterior part of the left maxillary basin to a point in front of and below the supramaxillary foramen of the same side already described On the right side there is a similar foramen which bears the same relation to the supramaxillary foramen of the same side In front of the foramen on the left side the groove continues On the right side the groove does not continue but is succeeded forwards by a narrow vertical wall to the anterior extremity of the specimen

On the inferior side the middle line is deeply grooved to a point opposite the middle of the superior median basin On each side of the groove the palatal aspect of the maxillary slopes slightly upwards and on the left side rolls up to a thickened inferior border of the inferior or submaxillary groove On the right side the palatal face of the maxillary turns up more obliquely to the border of the superior median basin

Measurements		MM
Total length of specimen . .		880
Length from front of median basin		150
Inside diameters of median basin	anteroposterior	160
	transverse	180
Depth of basin ...		64
Width of rostrum in front of basin ..		80

Measurements	MM
Width of rostrum at end of specimen	85
Width of lateral edge of right maxillary at inferior maxillary foramen	25
Length of inferior keel of vomer	120

This species exhibits the most unsymmetrical cetacean cranium known to me. Its size was probably about that of the *Chonesiphius indicus* of the present ocean Its exact locality is unknown, but it probably was exposed to the action of water for a considerable time, after being washed from its position of deposit It has been bored by Pholades in several places

BALÆNIDÆ.

I have remarked that the Mysticete with its single family the Balænidæ * "would seem to have derived their descent from some form allied to the Squalodontidæ, since their nasal bones are more elongated than those of the Odontoceti, and in Plesiocetus" (Cetotherium) "the superior cranial bones show some of the elongation of that family." This elongation of the superior cranial wall is not seen in the genus Squalodon, but is moderately developed in the genus Prosqualodon of Lydekker, founded on the *P australis* Lydd (*l c*) from Patagonia It is exhibited in a still more marked degree by the genus Agorophius g n. Cope, which is represented by the *Zeuglodon pygmæus* of Muller, which was referred to Squalodon by Leidy † The form of the skull in this genus approaches distinctly that of Cetotherium of the Balænidæ, and the permanent loss of the teeth would probably render it necessary to refer it to the Mystacocete

Stages of transition from some such genus as Agorophius to the typical whalebone whales are represented by several genera from the Yorktown beds. Theoretically the loss of teeth *by failure to develop* would be accompanied by the loss of the interalveolar walls, leaving the dental groove continuous and separate from the dental canal A genus displaying these characters has not been discovered, but I have no doubt that it will be. The new genus Siphonocetus Cope exhibits the groove roofed over by ossification of the gum, and distinct from the dental canal The genus Ulias indicates that a still farther degeneracy took place, in the fusion of the dental groove and dental canal, while the groove remained open. In Tretulias the same condition persists with the addition that the gingival passages and foramina are present, as in the genus Siphonocetus, and in the later genera In Cetotherium and in later Balænidæ the groove and canal are fused the gingival roof is complete and it is perforated It would appear then that Ulias may be descended from the undiscovered genus above mentioned while Tretulias is descended from Siphonocetus The exclusively Neocene genera may be tabulated as follows

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* "On the Cetacea," *American Naturalist*, 1890, p 611. Meyer, *Studien über Saugethiere*, Jena, 1886, p. 191

† *Extinct Mamm. Dakota and Nebraska*, 1869, p 420, Pl xix, Fig 8. It is doubtful whether this genus should be referred to the Zeuglodontidæ or the Squalodontidæ The relations of the maxillary and premaxillary bones posteriorly resemble most those of the latter family. It differs from Prosqualodon in the contact of the temporal fossæ on the middle line above, and in the greater elongation of the frontal and probably nasal

I Alveolar groove and dental canal distinct

Alveolar groove open	Not discovered
Alveolar groove roofed over and perforate	*Siphonocetus* Cope

II Alveolar groove and dental groove confluent in a gingivodental canal

Gingivodental canal open no gingival canals	*Ulias* Cope
Canal open gingival canals at one side	*Tretulias* Cope
Canal with complete and perforate roof	*Cetotherium* Brandt

SIPHONOCETUS PRISCUS Leidy gen nov *Balæna prisca* Leidy *Proceeds Academy Philada* 1854 p 308 *Eschrichtius priscus* Leidy Cope *Proceeds Acad Philada* 1869 11 Leidy *Extinct Mamm Dakota and Nebraska* 1869 p 441 *Infra* Plate vi Fig 3

Specimen in Museum of Academy of Natural Sciences of Philadelphia

SIPHONOCETUS EXPANSUS Cope *Eschrichtius expansus* Cope *Proceeds Acad Philada* 1869 p 11

The two mandibular rami ascribed to this species are the property of the Maryland Academy of Sciences The collection of Johns Hopkins University contains a fragment of a ramus of an individual of rather smaller size than the types Plate vi Fig 5

SIPHONOCETUS CLARKIANUS Cope sp nov Plate vi Fig 4

In the collection of the Johns Hopkins University there are portions of mandibular rami of two species of Siphonocetus The cranium of this genus is unknown but it is probably similar in character to that of the Cetotherium of Brandt This genus differs from Balænoptera in having the elements between the supraoccipital and the nasals much elongated so that there is a sagittal crest of greater or less length and in the non union of the dia and parapophyses into a vertebral canal * in which it agrees with Eschrichtius of Gray Some of the rami described belong possibly to species of Balænoptera, and it remains for future discoveries to ascertain which these are

One of the species above referred to is the *Siphonocetus expansus* Cope † The other species differs from all of those known to me In dimensions it exceeds those of any of the species described in this paper and is only exceeded by the species which I have described (*l c*) under the names of *Cetotherium leptocentrum* and *C cephalus*. It compares more closely in dimensions with the *C polyporum* from the Chesapeake formation of North Carolina. From the last named, and from the *C cephalus*, it differs in the robust form of the ramus, resembling in this respect rather such species as *C. palæatlanticum*, *S. priscus* (Leidy), and *S expansus*.

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* See *American Naturalist* 1890 p 611 where these genera are characterised but Van Beneden's name Plesiocetus, is used for Cetotherium and the latter name for Eschrichtius of Gray

† *Proceeds Academy Philada* 1869 p 11

The fragment representing the *S. clarkianus* is from the part of the ramus anterior to the base of the coronoid process, and is about 350 mm. in length. Both faces are convex, but the external is more strongly so than the internal. The superior part of the latter is, however, not horizontal as in the *S priscus*, nor is the internal face subhorizontal as in *S. expansus*. The two faces unite above at an obtuse angle, which if perfect, would be nearly right. The inferior edge is on the contrary a ridge which would be acute were it not rounded. The section of the ramus is therefore lenticular, with one side more convex than the other. Posteriorly the external convexity becomes greater, and the internal convexity rises towards the base of the coronoid, leaving a gentle concavity above the inferior border. The external foramina are large, distant, and only a little further below the superior ridge than those of the inferior internal row. The latter are in two series, those of the superior smaller and quite near the superior edge, the others larger and situated lower down, and separated by intervals of about 40 mm. No trace of Meckelian or alveolar grooves.

Measurements

		MM
Diameters at distal end	vertical	93
	transverse	72
Diameters near coronoid.	vertical	114
	transverse	99

The presence of two internal series of foramina distinguishes this species from any of those known to me. The rami are less compressed than those of the *C pusillum*, while the external position of the external foramina distinguishes it from the *S priscus* (Leidy). The presence of an acute-angled ridge below distinguishes it strongly from the *C palæatlanticum*. The species was larger than the *Cetotherium megalophysum* above described, having probably attained a length of forty feet.

I have dedicated it to Prof. William B Clark, of the Department of Geology and Paleontology of the Johns Hopkins University, to whom I am under obligations for the opportunity of studying most of the material here described. The label attached to the specimen states that it was dredged up near Point-no-Point, Chesapeake Bay, and was presented to Johns Hopkins University by Conrad Miller.

ULIAS MORATUS, gen et sp nov. Plate vi, Fig. 1.

Char. gen.—Mandible with the gingivodental canal open throughout most of its length, closed only near its apex. Gingival foramina represented by a few orifices on the alveolar border near the distal extremity.

This form is of much interest as representing in adult life a stage which is transitional in typical Balænidæ The alveolar groove is continuous with the dental canal and is permanently open It is probable then that this genus possessed teeth during a longer period than the existing Balænidæ and that they were retained in place by a gum so long that the canal could not close as is the case in the latter The absence of the long series of mental foramina characteristic of the true whales is further evidence to this effect

Van Beneden in his *Descriptions des Ossemens Fossiles des Environs d Anvers* describes a Balænid under the name of *Balænula balænopsis* which is represented by numerous individuals I agree with Lydekker (*Catalogue of Fossil Mammalia in the British Museum* Vol v) that Van Beneden has not given sufficient reason for separating the species generically from Balæna There is also considerable diversity between individuals referred to the species In a small specimen a narrow alveolar groove is present but Van Beneden makes no reference to the character in his description As the groove is closed in large specimens figured it is possible that M Van Beneden regarded the character as one of immaturity This may be the case as the groove figured by Van Beneden is a very narrow one and is quite different from the widely gaping channel in the *Ulias moratus* which is founded on an adult animal

Char specif —This species is founded on a nearly entire right mandibular ramus The condyle and angle are wanting as is also a piece from the proximal part of the distal third of the length This piece was found with the rest of the specimen but has been, for the present at least mislaid

The ramus is moderately curved horizontally but is not decurved except towards the angle A slight convexity of the inferior margin exists at the anterior part of the proximal two fifths of the length The superior border is occupied with the widely open alveolar groove which gradually contracts in transverse diameter distally, so as to be closed for the terminal fourth of the length On this region two or three large foramina issue from it on the middle line above and the terminal mental foramen issues at the superior extremity of the distal end, a little below the internal ridge on the external side of it Of the borders of the alveolar groove the internal is much lower than the external on the proximal sixth of the length The edges are then equal for a short distance and are acute The internal then becomes the more elevated, and continues so until its point of union with the external The internal wall of the groove is at first narrow, and its superior edge from being acute becomes narrowly rounded but becomes more obtuse distally as the wall becomes thicker The internal side of the ramus is very little convex The external side of the ramus is strongly convex in vertical section, hence it is that the external edge of the groove becomes wider as it becomes lower until at the beginning of the distal third of the length it forms a plane distinct from the convex external face This external convexity growing rapidly less the superior edge becomes proportionally narrower, and at the extremity of the ramus is about as wide as the internal superior ridge The extremity of the ramus is, in profile, truncated obliquely backwards and downwards to the obtuse angle at which it meets the slight rise in the outline of the inferior margin The external plane is slightly concave The internal face exhibits two surfaces, a superior convex portion which widens downwards and backwards, and an inferior wider flat portion separated from the superior by a straight ledge. The inferior border of the ramus is represented by an angle of about 70° for the greater part of the length. Below the region where the alveolar borders are equal the angle is more nearly right owing to the increased convexity of the external face. It is rounded below the coronoid process (which is broken off) and widens towards the angle. It is rounded on the distal third, becoming narrower rapidly towards the distal extremity.

Measurements.

	M
Length of ramus restored, on curve	1 900
Length of proximal fragment	790
Length of distal fragment...	390
Transverse diameter near condyle	.070
Transverse diameter where alveolar borders are equal	060
Transverse diameter at distal end of long fragment	.057
Vertical diameter where alveolar edges are equal. ...	073
Vertical diameter at distal end of long fragment	.074
Vertical diameter at proximal end of distal fragment. . .	079
Transverse diameter at proximal end of distal fragment	049
Vertical diameter of extremity.	.065

Besides the generic characters, the *Ulias moratus* presents various specific differences from the various species of Balænidæ which are known. The flatness of the internal face and the lack of decurvature distinguishes it from several of them, and the absence of fissure at the distal mental foramen separates it from others. I know of no species which has only one series of foramina and that one on the median line, on the distal fourth, except the present one. The size of the ramus resembles that of the *Cetotherium palæatlanticum* of Leidy, and represents a species of about twenty-five feet in length

TRETULIAS BUCCATUS, gen. et sp nov. Plate vi, Fig. 2

Char. gen.—Dental canal obliterated, and dental groove without osseous roof. Gingival canals and foramina present at one side of the alveolar groove.

The presence of the gingival canals and foramina in this genus, and their absence in Ulias, suggests two alternative phylogenies. First, it is possible that Tretulias is derived from Siphonocetus by failure of the roof of the gingival groove to develop external to the gingival canals by retardation Or second it may have been derived from Ulias or its ancestor by development of the roof about the gingival canals only leaving the remainder of the groove open In the latter case it represents a stage intermediate between Ulias and Cetotherium But one species is known to me

Char specif —This species is represented by parts of the mandibular rami of two individuals both preserved in the Museum of Johns Hopkins University of Baltimore One of these measures 607 mm in length and is in fairly good preservation the other is a shorter fragment and is considerably worn They agree in all respects

The longer fragment is gently curved both inwards and downwards It is compressed anteriorly and more depressed posteriorly so as to be but little deeper than wide The external face is very convex more so posteriorly than anteriorly so that that part of the superior wall which is developed is horizontal as in the *Siphonocetus priscus* Leidy The internal face is little convex and is slightly concave on a line near to and parallel to the inferior border Generally this angle is obtuse and is a little more than right anteriorly near the extremity it becomes more ridge like Posteriorly the section of the ramus represents more than a half circle the base being the internal face The internal basal concavity referred to disappears posteriorly but its place is occupied by a Meckelian fissure which extends along the bottom of the groove disappearing at the end of the terminal two fifths of the length

The gingival canals are very oblique extending horizontally forwards and outwards The internal foramina issue at spaces of one and two inches and they are not connected by a superficial groove The superior (external) series are equally oblique extending forwards and opening obliquely upwards Only two of these canals are present on the specimen and these are on the posterior two fifths of the length They are not complete on the external side and are therefore only grooves The common canal is open external to them and separates the superior from the external face of the ramus It has not the form of the section of the ramus as in other species but is shallow and with its long axis oblique to that of the section and parallel to that of the superior oblique part of the external face It is shallower than in the *Ulias moratus* and the species of Cetotherium and is separated by a wide osseous space from the inferior border That this form is descended from one with a larger canal is indicated by the fact that the fractures of the ramus display a closed fissure extending from the floor of the canal vertically downwards The canal is overhung on the inner side by a narrow free border of the superior perforate wall

Measurements

		M
Length of fragment		607
Diameters posteriorly	vertical	077
	transverse	078

Measurements.

		M.
Diameters more anteriorly	vertical	.070
	transverse	065
Diameters near distal extremity	vertical	078
	transverse	056

For a length of 200 mm. from the anterior extremity the borders of the gingivodental groove are sufficiently well preserved to demonstrate that it was not closed. The edges posterior to this are more or less worn, so that the roof might be supposed to have been broken away in the absence of other evidence. This is, however, forthcoming, for the internal border is so far preserved near the posterior extremity for a space of 185 mm. as to show that no roof has existed.

Omitting consideration of the generic characters, the following comparisons with other species may be made In the *Ulias moratus* the gingivodental groove is deeper and narrower, and the inner edge is much narrower. The external face is not so convex The *Siphonocetus priscus* of Leidy resembles it more nearly in form, but the superior (external) foramina are not so far inwards, and the two canals taken together conform nearly to the outline of the ramus in section, which is far from being the case in the *Tretulias buccatus* There is no Meckelian groove In the *Cetotherium palæatlanticum* Leidy, the external face is not so convex, and the internal gingival canals are, according to Leidy, "directed upward and moderately forward" In the *T buccatus* they are directed forwards horizontally, and very little upwards

Dr. Leidy has regarded the presence of a Meckelian fissure on the ramus of *C palæatlanticum* as a specific character, and possibly as generic, as he has given a new generic name to it,* without diagnosis This fissure I have not observed in any of the rami described by me, except in the case of the present species It is figured by Van Beneden in some of the Balænidæ of Antwerp, and is stated by him to be common to all the Balænidæ. It is, however, not visible in many recent skeletons, and I am inclined to doubt whether it is normal in adult animals. When the rami of recent Balænidæ dry, they sometimes split along the line of the primitive Meckelian groove, but not always. It remains to be seen whether this is the origin of the fissure in the present species and in the jaw described by Prof. Leidy. The generic name proposed by Prof. Leidy (Protobalæna) is preoccupied by Van Beneden (1867).

CETOTHERIUM PUSILLUM Cope, *Amer Naturalist*, 1890, p 616.

Eschrichtius pusillus Cope, *Proceeds Acad. Nat Sci.*, Phila., 1868, p. 191, 1869, p. 11.

The fragment of the ramus of this species above referred to is longer than any that have come under my observation, which now number five individuals. Its length is 723 mm., and the diameters at a fracture near the middle are as follows vertical, 71 mm transverse, 47 mm It is a little larger than those I have seen hitherto but agrees with them in every respect Plate vi Fig 6

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* *Extinct Mamm. Dakota and Nebraska*, 1869, p. 440.

CETOTHERIUM MEGALOPHYSUM sp nov

This species is established on a cranium which is complete from the condyles to near the anterior extremity of the nasal bones inclusive The apices of the zygomatic processes of the squamosal bones and the left auricular bulla are wanting The presence of the right bulla in the specimen enables comparisons to be made with species in which this part is preserved and where the cranium is wanting The skull has lain in the water for a considerable time as numerous barnacles and oysters have attached themselves to it The matrix has been generally removed from it by the action of the water

The cranium presents the characters of the genus in the close approximation of the temporal fossæ on the middle line and the elongation of the frontals anterior to this point Portions of premaxillaries and maxillaries remain at positions much posterior to that of the external nares The glenoid surface is separated by a sharp angle from the temporal fossa The sphenoid and presphenoid are keeled on the median line The vomer is visible between the palatines on the middle line below

The lateral occipital crests form with a line connecting the exoccipital processes across the foramen magnum an isosceles triangle with straight sides, each of which is rather shorter than the base line mentioned The apex of the supraoccipital is not elevated and is well produced forwards so that the length of the cranium from the posterior border of the frontal bone is one and one half times as long as the depth of the cranium at the same point

The tympanic bulla has the general form characteristic of species of this genus but presents specific characters of its own The part anterior to the posterior boundary of the external process is half as long again as the length posterior to it The two measurements are equal in the *C hupschii* according to Van Beneden The two ridges of the internal border unite 19 mm posterior to the anterior extremity, forming a single acute angle This character is not described by authors as occurring in any other species of this genus The anterior extremity is squarely truncate, and is semicircular in outline as the superior side is flat and the inferior convex In *C brialmontii* according to Van Beneden the bulla is not truncate in front nor is there a single acute edge on the inner side in front the portions of the bulla anterior and posterior to the internal process are of equal transverse width in the *C megalophysum* the anterior portion is considerably narrower than the posterior portion In *Mesocetus agrammus* according to Van Beneden there is a single acute internal ridge on the bulla but it is much longer than in the *Cetotherium megalophysum* and the anterior extremity of the bulla is rounded and not truncate in the former The bulla in the species now described presents an angle posteriorly, as viewed from below, instead of the rounded outline seen in several species.

The form of the skull differs from that of several species where that region is known. Thus in the *C. burtinii* according to Van Beneden, the occipital bone is broadly rounded in outline instead of triangular. In *C. dubium* this region is triangular, but is much more elevated and less produced forwards than in the *C. megalophysum*. It is more elevated than the length from the frontal bone posteriorly, instead of being only two-thirds as high as long. In the *C. morenii*, from Chubut, Patagonia, Lydekker states that the lateral occipital crests are more elevated than the apex of the occipital bone, giving a cordate outline to the posterior profile. This does not occur in any known northern species. The tympanic bulla of this species is also quite different. The occipital region of the *C. hupschii* resembles that of the *C. megalophysum* more nearly than that of any other species as far as known. In the *C. capellinii* Van Ben., according to the descriptions and figures of Capellini, the frontal is more elongate and narrower on the middle line and the tympanic bulla has not the posterior median angle when viewed from below such as exists in the *C. megalophysum*.

Comparison with the species described by Brandt from Russia and Italy, discloses numerous important differences.* The frontoparietal region in the *C. priscum* Br. is materially shorter than in the *megalophysum*. The auricular bullæ of *C. priscum*, *C. meyeri* and *C. klinderi* are gradually acuminate to an acute apex, when viewed from the inner side, and are without the convexity of the lower side and the truncation of the apex characteristic of our species. The bulla of the *C. rathkei* is a little more like that of the Chesapeake form, but it is nevertheless specifically distinct. It is, when viewed from above, broadly and subequally rounded at both extremities, instead of being truncate at the one and angulate at the other. The extremities are of subequal width, while the anterior portion is much narrower in the *C. megalophysum*.

Finally, the bulla of the *C. megalophysum* is of relatively larger size than in any of the species noticed above.

Measurements

	M.
Length of fragment below	.565
Width of fragment	.515
Width of glenoid region from bulla	.150
Length of glenoid region from bulla (least)	100
Width of sphenoid between foramina lacera.	.105
Length of tympanic bulla below	.100
Width of tympanic bulla in front of external process	53
Width of tympanic bulla behind external process	67
Width at exoccipital processes	400

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* *Memoires Acad. Imp. Sciences*, St. Petersburg, 1873, xx, p. 142.

Measurements	M
Length anterior to parietals above	225
Length of occipital from base of foramen magnum to apex (on curve) ...	390
Width of occipital condyles and foramen	140

The mandible of this species is unknown The size is not far from that of the *Cetotherium pusillum* and *Siphonocetus expansus* of Cope Should either of these turn out on the discovery of the skull, to be Cetothere form it will become necessary to compare them with the present species The total length of the animal was about twenty or twenty five feet

CETOTHERIUM CRASSANGULUM sp nov

This species is represented by an imperfect skull to which adhere three cervical vertebræ the posterior parts of both mandibular rami parts of the hyoid arch and a humerus The sagittal part of the skull is crushed and the frontal bones somewhat displaced outwards Large portions of the nasal bones remain but the premaxillaries and maxillaries are mostly wanting By excavating at the proper point the right otic bulla was brought to light The presence of this structure, together with a considerable part of the mandibular rami enables me to compare the individual with known species and to determine its specific reference with certainty The coossification of all the epiphyses shows that the animal is adult

The species belongs to that group in the genus Cetotherium which is characterized by the presence of a developed angle of the mandible but where it is short and broadly truncate The angle is however scarcely separated from the condyle and partakes of the articular surface apparently much as in the *Balænoptera emarginata* of Owen It is further distinguished from such species as *C priscum* *C meyerii* and *C klinderii* by the oval and little compressed form of the otic bulla resembling in this part rather the *C rathkei* From the *C megalophysum* the bulla differs by the much smaller dimensions as well as the different form Thus while the exoccipital width of the skull of the *C crassangulum* is half as great again as that of the *C megalophysum* the length of the bulla is only about three quarters that of the latter The bulla of the *C cephalus* Cope is very different in form from that of either species It is of the compressed type and is a little smaller than that of the *C crassangulum* It is truncate both anteriorly and posteriorly which is not the case with that of the latter species

Although the sagittal crest is crushed away it is evident that it is much less elevated relatively to the width of the skull than in any of the species so far known This elevation allowing for the injury, was about equal to that in the *C megalophysum* measured from the floor of the foramen magnum The exoccipital width is one half greater than that of the latter species The nareal orifice was about as far in advance of the supraoccipital angle as in the *C megalophysum* and much further than in any existing whale The supraorbital portions of the frontal are wanting and the nasals are spread apart laterally in the matrix. Their lateral portions are produced forwards on each side of the nares for a considerable distance, as vertical plates, in a manner which I have not observed in any other Balænid. The proximal extremity of the bone has the vertical laminate suture usual in the family. The bulla is oval and, viewed from below, the extremities are regularly rounded, the posterior but little wider than the anterior. The inferior side is regularly convex in all directions and the interior edge is flattened as in various other species of Cetotherium. The two lateral internal longitudinal angles come together well externally on the anterior end, thus leaving a very short anterior keeled edge. The fate of the angles is not visible posteriorly, as the bulla is in place, but they do not seem to come together.

There is preserved of the right mandibular ramus .595 m. from the angle forwards, and a corresponding part of the left ramus, measuring .740 m. The condyles and angles of both sides are preserved. The condyle is compressed, and the articular face presents both upwards and backwards. The angle is broadly truncate, its outline a broad parallelogram, which, when placed vertically, presents its lateral upper angle to the condyle, which obliquely truncates the same. The two surfaces are separated by a shallow groove for only a part of this contact; elsewhere they are continuous. The presence of a coronoid process cannot be positively demonstrated, owing to the position of the rami in the matrix. The ramus of the left side displays its characters at the anterior extremity of the fragment. The convexity of the external face, as usual, exceeds that of the internal, but both are rather flat and meet above at an angle which is a little less than a right angle. Foramina are very few in the portion of the ramus preserved. There is a very shallow groove on the internal side of the superior angle, which is pierced by a single small foramen. On the external side a single foramen of still smaller size pierces the external wall anterior to the position of the internal foramen mentioned, and three times as far below the superior angle. The inferior edge of the left ramus is preserved at a position not far posterior to that just described of the right ramus. It presents an obtuse angle, indicating that a more acute angle exists anterior to its position. Posteriorly the right ramus is rounded more broadly below.

The characters of the ramus differ from those of any of the North American species so far known. In *S. clarkianus* and *C. polyporum* the foramina are much more numerous at the corresponding locality. The form of the part is different in the *S. expansus*, *C. pusillum* and *C. cephalus*. In *C. polyporum* and *C. cephalus* the form is more compressed and the superior edge more acute; in the other species named it is less so. There is no meckelian groove as in the *C. palæatlanticum*.

The three cervical vertebræ diminish in anteroposterior and transverse diameters from the first to the third. The diapophyses of the atlas arise opposite to the base of the neural canal and are short. The distal end of each is depressed. No tuberculum atlantis. The axis is slightly concave transversely below between the bases of the parapophyses The latter are directed obliquely backwards at an angle of 45° from the articular surface and are vertically expanded at the distal extremity The parapophyses of the third cervical are as long as those of the second but are more slender

The humerus is of the size of that of the *Cetotherium brialmontii* as represented by Van Beneden and has the moderately elongate form characteristic of the species of Cetotherium so far as they are known The tuberosity and crest are broken off but a portion of the smooth surface which connects the former with the head remains The distal end is somewhat crushed and the olecranar facet is not as well distinguished from the remainder of the ulnar facet as in most specimens The humerus is distinguished by two peculiarities The crest ceases near the middle of the length and there is a wide and medially deep fossa on the inner side of the shaft immediately beyond the line of the distal end of the crest Van Beneden figures a somewhat similar fossa in the *Cetotherium hupschii* Van B but in that species its position is more proximal and it is bounded anteriorly by the distal portion of the crest The other species of Cetotherium and those of Balænoptera figured by Van Beneden do not present this fossa

Measurements			M
Total length of fragment from line of paroccipital			870
Axial length from occipital condyles to nasal bones inclusive			600
Length on occipital bone from foramen magnum to apex of supraoccipital inclusive (apex restored)			300
Width of skull at paroccipital processes			820
Width of skull at exoccipital processes			620
Width of condyles and foramen			215
Width of foramen magnum			070
Length of mandibular ramus to posterior foramen			680
Depth of condyle and angle posteriorly			165
Depth of posterior face of angle			120
Width of posterior face of angle			090
Vertical diameter of condyle (axial)			078
Transverse diameter of condyle (axial)			070
Depth of ramus at last foramen (approximate)			140
Depth of ramus 130 mm anterior to condyle			110
Diameters of otic bulla	anteroposterior		060
	transverse	at notch	048
		at process	055
Length of epihyal			120
Diameters of atlas	anteroposterior below		060
	transverse	of centrum ..	224
		do with diapophyses	323
Diameters of axis	anteroposterior below		040
	transverse in front . ..		172

Measurements		M.
Length of parapophysis of second cervical from centrum		.185
Greatest length of humerus		
Anteroposterior diameter of head		.180
Anteroposterior diameter of shaft at middle		115
Diameters of distal end	transverse (somewhat crushed)	075
	anteroposterior	170

For the opportunity of describing this specimen I am indebted to the Rev John T. Goucher, President of the Woman's College of Baltimore, who kindly placed the specimen at my disposal I am also indebted to Prof Arthur Bibbins, of the same institution, who first drew my attention to it. The specimen was presented to the Woman's College by Dr Richard Eppes, of City Point, Va , who obtained it from the Yorktown bed at Tarbay, not far from that place. Dr. Eppes discovered in the year 1854 the specimen which became the type of the *S priscus* of Leidy, and it is through his hospitality that I have been enabled to visit recently the locality, seven miles below City Point on the James river, where the skull of the *C. crassangulum* was found

BALÆNOPTERA SURSIPLANA sp nov

Five species of Balænidæ from the Yorktown bed are known from otic bullæ. These are *Balæna mysticetoides* Emmons, *Mesoteras kerrianus* Cope, *Cetotherium cephalus* Cope, *C megalophysum* Cope, and *C crassangulum* Cope. The present species will be the sixth. It is established on a bulla from the Yorktown formation of Maryland, and is in excellent preservation, the middle portion of the inferior thin wall being absent.

It is not necessary to compare this species with any of those of the genus Cetotherium. On comparison with the Balænopteræ described by Van Beneden, it is to be observed that they all differ from the present form in the convexity of superior face, where the dense layer or lip has a different chord or face from that of the space which separates it from the internal longitudinal marginal angle. In the *B. sursiplana* there is but one superior plane from the eustachian orifice to the internal edge, which is absolutely flat. In all these species also the dense layer of the lip is reflected on the superior edge of the external thin wall at its anterior end In the present species this layer is reflected in a very narrow strip underneath the free border, which overhangs it. In all these species also the anterior extremity, as viewed from above or below, is angulate, the angle marking the end of the inner border of the dense layer or lip. In *B. sursiplana* the anterior extremity; viewed in the same way, is truncate. The species which appears to approach nearest is the *B definita* Owen, which is figured by Lydekker * This otolite appears to be flatter above than the species described by Van Beneden, although the figure is not clear in this respect. It has the oblique upwards and backwards looking face at the posterior extremity, which is a conspicuous feature of the *B.*

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* *Quar. Journ. Geolog Society*, 1887, Pl. II, Fig. 3, p 11.

sursiplana although it is not so sharply defined by a strong transverse convexity of the superior surface as in the latter Nor is there as strong a bevel of the anterior extremity of the superior face when viewed from within as in *B definita* An equally conspicuous difference is to be seen in the form of the inferior wall According to Lydekker this surface when the bulla is viewed from within consists of three planes separated by rounded angles of which the median is longer than those at the ends In the *B sursiplana* this surface is regularly convex from end to end In size this species is like that of the large Balænopteræ including the *B definita*

Measurements	MM
Axial length of bulla	98
Width at posterior extremity of anterior hook at superior border	71
Width at anterior extremity of orifice	85
Width at posterior extremity of orifice	53
Depth at middle (about)	55
Greatest depth of lip	38

BALÆNA AFFINIS Owen *Brit Foss Mamm and Birds* 1846 plate opp p xlvi Lydekker *Catal Foss Mamm* Brit Mus v p 17 Fig 7

Two otic bullæ agree with the figures and descriptions of this species except in their smaller dimensions The smallest given by Lydekker is 120 mm The larger specimen in the Johns Hopkins collection is 105 mm and the smaller is 95 mm

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All of the material described in this paper excepting the type specimen of the *Cetotherium crassangulum* belongs to the Museum of the Johns Hopkins University of Baltimore and I wish to express my obligations to the authorities of that institution and especially to Prof William B Clark in charge of the Department of Geology for the opportunity of studying it

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EXPLANATION OF PLATE

Diagrammatic sections of the left mandibular rami of species of Balænidæ one half natural size

Fig 1 *Ulias moratus* Cope
Fig 2 *Tretulias buccatus* Cope
Fig 3 *Siphonocetus priscus* Leidy
Fig 4 *Siphonocetus clarkianus* Cope
Fig 5 *Siphonocetus expansus* Cope
Fig 6 *Cetotherium pusillum* Cope
Fig 7 *Cetotherium polyporum* Cope

Lettering *E G* External gingival canal *I G*, Internal gingival canal *G G*, Gingival groove, *D C* Dental canal

APPENDIX.

MESOCETUS SIPHUNCULUS, sp. nov.

The genus Mesocetus was established by Van Beneden* for Mystacoceti in which the posterior part of the mandibular ramus approaches in its characters that of the Odontoceti. That is, the condyle is situated at the middle of the vertically compressed posterior border, and is more or less expanded transversely. It is thus below the superior part of the posterior extremity of the ramus, instead of constituting that part, as it does in the whalebone whales generally. That structure is naturally adapted to a more anterior direction of the glenoid cavity, as is shown by Van Beneden. The only known species of the genus is the *M agrami* Van Ben. from the Neocene beds of Agram in Croatia, Austria It is of much interest that a second species is now determined to have existed in the Neocene formation of Virginia

Van Beneden does not appear to have seen much if any of the mandibular ramus anterior to the condyle I have a ramus nearly entire, and smaller parts of three others, and can thus locate the genus Mesocetus in relation to those already defined In the species now to be described, the ramus has no large dental canal, but it is almost entirely filled with spongy bone of moderate coarseness The gingival canals unite into a single tube which is not larger than one of the external gingival canals, and which runs about opposite to them or a little distance below the superior edge In this disposition of the canals Mesocetus differs from any of the genera of Mystacoceti referred to in the preceding pages.

Char. specif.—Founded primarily on a nearly complete right mandibular ramus, and represented by the anterior part of a second ramus of a smaller individual. The distal part of the ramus of a third individual resembles the last one, but differs in some respects from it, so that the reference cannot now be made These specimens I saw taken from the same locality and bed, and I took the type specimen myself piecemeal from the deposit. The latter is a wet phosphatic marl, and it was impossible to remove the specimen without damage. It has been reconstructed under my eye by my assistant so as to be in good condition

The ramus exhibits little curvature in any direction. It is strongly compressed, and although the external face is more convex than the internal, the convexity is not great. The superior border is throughout thicker transversely than the inferior. Both are obtusely rounded anteriorly, but both become more compressed posteriorly. The inferior border becomes rather acute posteriorly. The usual ledge is present on the internal or symphyseal side of the distal extremity The representative of the anterior part of the dental canal issues posterior to the distal border and a little below the superior border; the external border of the foramen is notched and a shallow groove rises from its superior angle and returns posteriorly as a shallow groove of the superior middle line This groove disappears in a small median foramen the first of the series of small foramina of the inner side of the superior border The foramina of this series are small and represent the exits of narrow canals which run horizontally inwards so close together that a fractured surface passing through them resembles a sutural surface with oblique grooves From a median superior position they assume an internal lateral position and disappear at about the posterior third of the ramus The inner face of the ramus above these foramina becomes slightly concave The large external foramina are rather numerous and are situated at intervals of about 45 mm They are situated posteriorly about as far below the superior edge as those of the internal series and they retain that position anteriorly not rising to a higher position as is the case with those of the internal series Posteriorly the internal face becomes slightly concave next the inferior border The posterior part of the ramus is strongly concave on the inner side and is thin walled The base of the coronoid process indicates that it is flared outwards

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* *Memoires de l'Academie royale des Sciences de Lettres et des Beaux Arts de Belgique* 1882, Vol. xlv.

The condyle is a vertical oval tapering more gradually upwards than downwards The superior border of the ramus is thin and curves strongly inwards quite as Van Beneden has restored the corresponding part in the *M agrami* This condyle differs from that of the *M agrami* in having a less transverse extent especially on the inner side and in lacking the transverse ridges and grooves described and figured by Van Beneden (Pl ii Fig 10) This is the only part of the two animals which is present in both specimens and the comparison indicates that the species are different

I have probable vertebræ of this species but I cannot yet associate them with certainty A first dorsal was found in immediate contact with the posterior part of the ramus This resembles considerably the corresponding vertebra of the *M agrami* described by Van Beneden It has lost its epiphyses but if these were added its anteroposterior diameter would be less than that of the latter and there is not nearly so conspicuous a facet for the head of the first rib This is very indistinct in my vertebra A perfect humerus was also found near the position from which the second and third rami were dug out Until I know the proper relation of this humerus I will only describe it so far as to say that it has the proportions of that of Cetotherium but that the tuberosity is not produced beyond the head and the olecranar facet is not distinguished by an angle from the remainder of the ulnar facet

Measurements.

		MM.
Total length (subject to some correction on account of a fracture)		1200
Diameters at mental foramen	vertical	97
	transverse	28
Diameters at 500 mm from distal end	vertical	90
	transverse	48
Diameters of condyle	vertical	120
	transverse	61
Diameters of centrum first dorsal vert.	vertical	57
	transverse	85
	anteroposterior	81
Expanse of diapophyses		170

From the Miocene marl of the Pamunkey river, Virginia.

Stated Meeting, March 1, 1895.

Treasurer, Mr. Price, in the Chair.

Present, 15 members.

Dr. Richard A. Cleemann, a lately-elected member, was presented to the Chair.

Correspondence was submitted as follows:

Letters accepting membership from Dr. Richard A. Cleemann, Philadelphia; Mr. Richard S. Hunter, Philadelphia.

Letters of acknowledgment (143, 146) were received from the Franklin Institute, Engineers' Club, Wagner Free Institute of Science, Free Library of Philadelphia, Historical Society of Pennsylvania, College of Physicians, Numismatic and Antiquarian Society, Mercantile Library, Library Company of Philadelphia, Hon. James T. Mitchell, Hon. Henry Reed, Profs. John Ashhurst, Jr., F. X. Dercum, Henry D. Gregory, H. V. Hilprecht, J. P. Lesley, J. A. Ryder, Drs. John H. Brinton, W. W. Keen, F. W. Lewis, Morris Longstreth, Charles A. Oliver, C. N. Peirce, James W. Robins, W. S. W. Ruschenberger, Henry Clay Trumbull, Messrs. R. L. Ashhurst, Henry C. Baird, Cadwalader Biddle, Lorin Blodget, Charles

Bullock, S Castner, Jr, C H Clark, Samuel Dickson, Patterson DuBois, Philip C Garrett, George Harding, William W Jefferis, Benj Smith Lyman, Franklin Platt, Frederick Prime, Theo D Rand, Julius F Sachse, W P Tatham, Louis Vossion, Joseph M Wilson, Ellis Yarnall, Philadelphia, Mr Philip P Sharples, West Chester, Pa

A letter from Lorin Blodget dated February 23, 1895, was read, in reference to a large collection of reports on Applied Electric Force, which he had obtained

Accessions to the Library were reported from the K Nordiske Oldskrift Selskab, Copenhagen, Denmark, Académie R de Belgique, Bruxelles, Ecole des Mines, Secréteriat de S A S le Prince Albert I^er^ de Monaco, Paris France, U S Geological Survey, U S Department of Agriculture, Washington, D C, Artillery School, Fort Monroe, Va

Photographs for the Society's album were received from Prof James M Hart, Ithaca, N Y, Mr Robert N Toppan, Cambridge, Mass

A paper by Dr F Boas on "Salishan Texts" was presented by Dr Brinton, who gave a brief synopsis of it

Mr F Prime made some remarks on the relation of gold and silver, showing the output of those metals through a series of years, and the relative values of the two at different periods of recent history

An extended discussion took place on Mr Prime's communication, partaken in by Dr Morris, Dr Greene, Dr Horn, Prof Snyder, Mr Rand and others Opinions were expressed on the bearing of the facts stated, on the merits of a bimetallic standard of currency, etc

Dr Greene spoke of the new element akin to nitrogen, which has lately been discovered, called *Argon*

The death of Gen William F Raynolds, U S A, Detroit, Mich, was announced

And the Society was adjourned by the presiding member

Stated Meeting, March 15, 1895.

Treasurer, Mr. Price, in the Chair.

Mr. Charlemagne Tower, Jr., a newly-elected member, was presented to the Chair, and took his seat.

Correspondence was submitted as follows:

Acknowledgments of election to membership were received from:

Dr. Herman Snellen, Jr., Utrecht, Netherlands.
Prof. William W. Goodwin, Cambridge, Mass.
Prof. Alpheus Hyatt, Cambridge, Mass.
Mr. Charles C. Harrison, Philadelphia.
Mr. Charlemagne Tower, Jr., Philadelphia.

Letters of acknowledgment were received from the Royal Society of Victoria, Melbourne (142, 144); Royal Society of New South Wales, Sydney (142, 144); Societas pro Fauna Flora Fennica, Helsingfors, Finland (145): Physico-Mathematical Society, Kasan, Russia (144, 145); K. K. Geologische Reichsanstalt, Vienna, Austria (145); Verein f. Erdkunde, Dresden, Saxony (145); Verein der Freunde der Naturgeschichte, Mecklenburg, Germany (142, 144, 145); R. Istituto Lombardo di Scienze e Lettere, Milan, Italy (144); Sir Henry W. Acland, Oxford, Eng. (145); Mr. F. Prime, Philadelphia (145); University of Wisconsin, Madison (136–141); Museo Nacional, Buenos Aires, Argentine Republic (142, 144); Société Scientifique du Chili, Santiago (145).

Letters of acknowledgment (143 and 146) were received from the Nova Scotian Institute of Natural Science, Halifax; Mr. Horatio Hale, Clinton, Ontaria; Geological Survey, Ottawa, Canada; Laval University, Hon. J. M. Le Moine, Quebec, Canada; Canadian Institute, Toronto; Bowdoin College Library, Brunswick, Me.; Society of Natural History, Maine Historical Society, Portland, Me; Prof. C. E. Hitchcock, Hanover, N. H.; Vermont Historical Society, Montpelier; Amherst College Library, Amherst, Mass.; Athenæum, Boston Society of Natural History, Massachusetts Institute of

Technology, Massachusetts Historical Society, American Academy of Arts and Sciences, State Library of Massachusetts, Mr Stephen P Sharples, Boston, Mass , Museum of Comparative Zoology, Profs George Lincoln Goodale, J D Whitney, Dr Justin Winsor, Mr Robert N Toppan, Cambridge, Mass , Free Public Library, New Bedford, Mass , Essex Institute, Salem, Mass , Prof Elihu Thomson, Swampscott, Mass , American Antiquarian Society, Worcester, Mass , Providence Franklin Society, R I Historical Society, Brown University, Dr A S Packard, Providence, R I , Mr George F Dunning, Farmington, Conn , Connecticut Historical Society, Hartford , Connecticut Agricultural Experiment Station, Yale University, Profs O C Marsh, H A Newton, New Haven, Conn , New York State Library, Prof James Hall, Albany, N Y , Buffalo Library Society of Natural Sciences, Buffalo, N Y , Prof Edward North, Clinton, N Y , Profs T F Crane, J M Hart, W T Hewett, Ithaca, N Y , American Institute of Electrical Engineers, Columbia College, American Museum of Natural History, New York Academy of Medicine, Historical Society, New York Hospital, Academy of Science, Brevet Brigadier General H L Abbot, Captain R S Hayes, Profs Joel A Allen, Isaac H Hall, J J Stevenson, Dr Daniel Draper, New York, N Y , Geological Society of America, Rochester, N Y , Prof W Le Conte Stevens, Troy, N Y , Oneida Historical Society, Utica, N Y , United States Military Academy, West Point, N Y , Free Public Library, Jersey City, N J , Prof Robert W Rogers, Madison, N J , Profs C F Brackett, A B Fine, W Henry Green, Princeton, N J , Dr Charles B Dudley, Altoona, Pa , Dr Robert H Alison, Ardmore, Pa , Dr Charles F Himes, Carlisle, Pa , Prof M H Boyè, Coopersburg, Pa , Hon Eckley B Coxe, Drifton, Pa , American Academy of Medicine, Dr Traill Green, Prof J W Moore, Rev Thomas Conrad Porter, Easton, Pa , State Library of Pennsylvania, Hon Robert E Pattison, Mr Andrew S McCreath, Harrisburg, Pa ; Haverford College, Profs Lyman B Hall, Allen C Thomas, Haverford, Pa , Mr John Fulton, Johnstown, Pa , Academy of

Natural Sciences, Hon. Henry Reed, Profs. Andrew A. Blair, James MacAlister, William Pepper, Samuel P. Sadtler, Albert H. Smyth, Dr. D. G. Brinton, Messrs. R. Meade Bache, Richard S. Hunter, E. V. d'Invilliers, Samuel Wagner, Mrs. Helen Abbott Michael, Philadelphia; Mr. Heber S. Thompson, Pottsville, Pa; Rev. F. A. Muhlenberg, Reading, Pa; Dr. W. H Appleton, Swarthmore, Pa.; Dr John Curwen, Warren, Pa.; Philosophical Society, Hon. William Butler, West Chester, Pa.; Wyoming Historical and Geological Society, Wilkesbarre, Pa; Agricultural Experiment Station Newark, Del.

Accessions to the Library were reported from the Government Observatory, Madras, India; R. Geographical Society, St. Petersburg, Russia; État Indepéndant du Congo, Bruxelles, Belgique; K. K Zoologisch botanisch Gesellschaft, Vienna, Austria; R. Accademia d. Scienzo, Turin, Italy; R Academia de Ciencias y Artes, Barcelona, Spain, Society of Antiquaries, R Meterological Society, London, Eng.; R. Geological Society of Cornwall, Penzance, Eng.; Theological Seminary, Andover, Mass.; Essex Institute, Salem, Mass.; Prof. O. C. Marsh, New Haven, Conn; Oneida Historical Society, Utica, N. Y.; American Academy of Medicine, Easton, Pa.; Free Public Library, Jersey City, N. J.; Mercantile Library, Academy of Natural Sciences, College of Physicians, University of Pennsylvania, Indians' Rights Association, Mr. Henry Carey Baird, Philadelphia; United States Naval Institute, Annapolis, Md.; Enoch Pratt Free Library, Editor of the *Journal of Philology*, Baltimore, Md.; Historical Society of Southern California, Los Angeles; Mercantile Library Association, St. Louis, Mo., Society of Natural History, Cincinnati, O.; Mr. William R. Head, Chicago, Ill.; State University of Iowa, State Historical Society, Iowa City, Ia.; University of Wisconsin, Madison; Prof. J. L. Campbell, Crawfordsville, Ind.; University of Kansas, Lawrence; Colorado Scientific Society, Denver; Observatoire Météorologique Central, Observatorio Astronomico Nacional de Tacubaya, Direccion Général de Estadistica, Mexico, Mexico; Sociedad Cientifica Argentina, Buenos

Aires, Agricultural Experiment Stations, Amherst, Mass, College Park, Md, Experiment, Ga, Fort Collins, Colo, Lincoln Neb, Corvallis, Oregon, Lawrence, Wyo

The following deaths were announced

M Victor Duruy, Paris France

Sig Giovanni Battista Rossi, Rome, Italy

A portrait of the late Dr John Le Conte was presented on behalf of the donor, Mrs Le Conte by Dr Horn, who referred to the services to science rendered by Dr Le Conte Dr J C Morris followed with a tribute to the memory of Dr Le Conte s personal and official career, and moved a vote of thanks to Mrs Le Conte for the gift of the portrait Carried

Mr Benjamin Smith Lyman read a paper entitled "Folds and Faults in Pennsylvania Anthracite Beds"

On account of the large number of engravings required by the paper, on motion of Dr Brinton it was referred to a special committee of three, to be appointed by the Chair

The following paper was read by title by Prof E D Cope "The Structure and Origin of the Zygomatic Arch in the Mammalia," by Daniel Slade, Mus Comp Zoology

Dr Cope presented a paper, for the Proceedings, illustrated by a number of specimens, on some "Extinct Cetacea"

Pending nominations 1806, 1807, 1808, 1809 were read

And the Society was adjourned by the presiding member

Stated Meeting, April 5, 1895

President, Mr **Fraley**, in the Chair

Mr Henry C Mercer, a newly elected member, was presented to the Chair and took his seat

Correspondence was submitted as follows·

Acknowledgments of election to membership were received from

R T Glazebrook, F R S, Cambridge, Eng.

C A M Fennell, Litt D, Cambridge, Eng.

Prince Roland Bonaparte, Paris, France.
E. A. Wallis Budge, Litt D., London, Eng.
Sir George Grove, C B , London, Eng.
William Huggins, D.C L , London, Eng.
Rev. James Legge, LL.D , Oxford, Eng.
Rev. Isaac Taylor, LL.D , York, Eng
Prof. W. Wundt, Leipzig, Germany.
Dr. Ernst Curtius, Berlin, Prussia.
Mr. Joseph Wilcox, Philadelphia.
Mr. Henry C. Mercer, Doylestown, Pa
Prof. Gabriel de Mortellet, St. Germain-en-Laye, France.

Letters of envoy were received from the Government Astronomer, Madras, India; K. K. Astronomisch-meteorologische Observatorium, Triest, Austria; Université Royale, Lund, Sweden; Bureau des Longitudes, Paris, France, R. Academia de Ciencias y Artes, Barcelona, Spain; Meteorological Office, British Association for the Advancement of Science, London, Eng., Royal Irish Academy, Dublin, Oneida Historical Society, Utica, N. Y.; Dirección General de Estadistica de la República Mexicana, Mexico.

Letters of acknowledgment were received from the Institut Egyptien, Cairo (142, 144, 145), R. Zoological Society, Amsterdam, Netherlands (145), Royal Library, The Hague, Holland (146); Colonial Museum, Musée Teyler, Harlem, Holland (146); Friesch Genootschap van Geschied Oudheid en Taalkunde, Leewarden, Holland (145), Académie R. des Sciences, des Lettres, etc., Bruxelles, Belgique (144, 145); Prof. Peter R. v. Tunner, Leoben, Styria (144); Naturforschende Gesellschaft, Bamberg, Bavaria (145); Naturhistorische Gesellschaft, Hannover, Prussia (142, 144, 145); Prof. Carl Vogt, Geneva, Switzerland (145); Accademia R. delle Scienze, Torino, Italia (144); Philosophical Society, Cambridge, Eng. (145); Public Library, Boston, Mass. (143, 146); Profs. William W. Goodwin, Alpheus Hyatt, C. R. Lanman, Cambridge, Mass. (143); Rev. Edward E. Hale, Roxbury, Mass. (146); Marine Biological Laboratory, Woods Holl, Mass. (143, 146); R. I. Agricultural Experiment Station, Kingston (143, 146);

Prof Levi W Russell, Providence, R I (143), *American Journal of Science* (143), Prof H A Newton, New Haven, Conn (142, 144, 145), Prof B G Wilder, Ithaca, N Y (143, 146), N Y Academy of Medicine (141, 145), Editor of the *Popular Science Monthly* (143), Hon Charles P Daly (143, 146), Prof Henry F Osborn, New York, N Y (143), Oneida Historical Society, General Charles W Darling, Utica, N Y (143), Profs William Libbey, Jr (143), C A Young, Princeton, N J (143, 146), Dr F D Warfield, Easton, Pa (143), Mr S M Sener, Lancaster, Pa (143), Profs Henry F Bitner, H Justin Roddy, Millersville, Pa (143), Profs Andrew A Blair (142, 144, 145), J Solis Cohen (143), Drs Persifor Frazer (146), John Marshall (146), D K Tuttle (143) Charles Stewart Wurts, (143, 146), Messrs Arthur Biddle (143), Arthur E Brown (143, 146) Robert Patterson Field (143, 146), Joseph C Fraley (143), William A Ingham (143, 146), Thomas Meehan (143), Robert Patterson (143), L A Scott (143, 146), Joseph Wilcox Philadelphia (143–146), Patent Office Library Washington, D C (143), Captain William N Casey, U S A, Norfolk, Va (143), Academy of Science, St Louis, Mo (146) College of Agriculture and Mechanic Arts, Mesilla Park, N M (143), Museo Nacional (144), Société Scientifique du Chili, Santiago de Chile (142)

Letters of acknowledgment (143 and 146) were received from the Smithsonian Institution (6 cases, 446 packages), Anthropological Society, Bureau of Ethnology, Library Surgeon General's Office, U S Naval Observatory, U S Coast and Geodetic Survey, U S Geological Survey, U S Department of Agriculture, Rt Rev John J Keane, Profs S F Emmons, C V Riley, Charles A Schott, Dr W J Hoffman, Mr Lester F Ward, Washington, D C, Mr Jedediah Hotchkiss, Staunton, Va, University of Virginia, Va, Prof J W Mallet, University of Virginia, Va, Hon Lyon G Tyler, Williamsburg, Va, West Virginia University, Morgantown, Agricultural Experiment Station, Raleigh, N C, Georgia Historical Society, Savannah, Agricultural Experiment Station, Knoxville, Tenn, Experiment Station Library, Auburn, Ala, University of Alabama, University P O; University of California, Berkeley, Lick Observatory, Mt. Hamilton, Cal; California Academy of Sciences, San Francisco; Texas Academy of Science, Austin, State Agricultural College, Michigan; Geological Survey of Missouri, Jefferson City; Prof. E. W Claypole, Akron, O; Editors of the *Journal of Comparative Neurology*, Granville, O, Society of Natural History, Cincinnati Observatory, Hon. J D Cox, Cincinnati, O; Oberlin College, Oberlin, O.; Athenæum Library, Columbia, Tenn; Academy of Sciences, St. Louis, Mo; Prof. J. L. Campbell, Crawfordsville, Ind, Indiana Engineers' Society, Remington; Field Columbian Museum, Newberry Library, Chicago, Ill.; Iowa Experiment Station, Ames; Iowa Masonic Library, Cedar Rapids; Academy of Natural Sciences, Davenport. Ia, State Historical Society, Iowa City, Ia, American Archæological and Asiatic Association, Nevada, Ia; State Historical Society of Wisconsin, Academy of Sciences, Arts and Letters, Madison, Wis; Agricultural Experiment Station, Manhattan, Kans; Kansas Academy of Science, Topeka; Agricultural Experiment Station, Corvallis, Oregon; Colorado Scientific Society, Denver; Agricultural Experiment Station, Fort Collins, Col.; Nebraska State Historical Society, Lincoln; Academy of Science, Tacoma, Wash.; University of Wyoming, Laramie; Dakota Agricultural College, Brookings.

Accessions to the Library were reported from the Naturforscher-Verein, Riga, Russia; K. D. Geografiske Selskab, Copenhagen; Université Royale, Lund, Sweden; Société Royale de Geographie, Antwerp, Belgium; Hungarian Nat. Museum, Budapest; Académie des Sciences, Cracow, Austria; Osservatorio Astronomico Meteorologico, Trieste, Austria; K. K. Naturhistorische Hofmuseum, Vienna, Austria, Akademie der Wissenschaften, Verein zur Beförderung des Gartenbaues, Berlin, Prussia; K. Sachsische Gesellschaft der Wissenschaften, Leipzig; Naturhistorische Verein der Preussischen Rheinlande, etc, Bonn, Prussia; Württembergische Kommission für Landesgeschichte, Stuttgart; Prof. M. E. Renevier, Lausanne, Switzerland; R. Academia de Ciencias, R. Academia de la Historia, Madrid, Spain, Muséum d Histoire Naturelle Paris, France, Mr James L Bowes, Liverpool, Eng British Association for the Advancement of Science, London, Eng, Geographical Society, Manchester, Eng, R I Historical Society, Providence, Academy of Sciences Historical Society, New York, N Y, Rev Joseph H Dulles Princeton, N J, Messrs Henry Phillips Jr Julius F Sachse, Philadelphia, Light House Board, Smithsonian Institution, Mr F W Hodge, Washington, D C, Editors of the *Journal of Comparative Neurology*, Granville, O Agricultural Experiment Stations, Durham, N H, Lexington, Ky, Ames, Ia Sociedad Central de Profesores del Estado, Puebla, Mex, Observatorio Meteorologico Central, Xalapa, Mex Institute of Jamaica, Kingston, Direccion Genéral de Estadistica, Guatemala, C A

A photograph for the Society's Album was received from Prof Peter R v Tunner, Leoben, Austria

The following deaths were announced

Prof Henry Coppée, Bethlehem, Pa Born October 13, 1821 died March 21, 1895

Hon Richard Vaux, Philadelphia Born December 19, 1816, died March 22, 1895

Dr W S W Ruschenberger, Philadelphia Born September 4, 1807, died March 24, 1895

Prof John A Ryder, Philadelphia Born 1852, died March 26, 1895

Prof James E Oliver, Ithaca, N Y Born July 27, 1829, died March 27, 1895

Dr Brinton moved that the President, at his leisure, appoint members to prepare suitable obituary notices of the deceased

Prof Cope, by consent, paid a tribute to the scientific standing of the late Prof Ryder, and the exceptional value of his investigation into ontogeny

The President appointed Prof Cope to prepare the obituary notice of the late Prof Ryder Prof Cope accepted the appointment.

Prof. Cope read his paper on "Crania of Fossil Whalebone Whales," as announced.

Mr. Du Bois read a paper on the "Priority of the Manufacture of Extremely Thin Gold Leaf by Electrical Processes."

Remarks, corroborative of the tenor of the paper, were made by Mr. Joseph Fraley.

The Committee upon Mr. Lyman's Paper reported and was continued.

Pending nominations 1306, 1307, 1308, 1309, and new nominations 1810, 1311, 1312, were read.

And the Society was adjourned by the President.

Stated Meeting, April 19, 1895.

President, Mr. FRALEY, in the Chair.

Mr. Richard S. Hunter, a newly elected member, was presented to the Chair, and took his seat

Correspondence was submitted as follows:

A circular letter from the Geographical Society of Toulouse, France, requesting that the Society examine into the method of applying the Decimal System parallel and simultaneously to the measurement of angles and time.

A letter was read from Philip P. Calvert, Secretary of the Ryder Memorial Meeting, requesting the Society to appoint a representative to the Committee of Publication of that meeting.

On motion, the President was requested to make the appointment.

Prof. Cope was subsequently appointed.

Letters were read from Mr. Dalton Dorr, Superintendent of the Pennsylvania Museum of Industrial Art, and Mr. F. D. Langenheim, Curator of the Numismatic and Antiquarian Society, requesting the Society to take the receipt of the former institution for the Society's coins and medals deposited therein, and return the receipt held by the latter institution A list of the coins and medals belonging to the Society accompanied the letters

Dr Brinton moved that the letters of Messrs Dorr and Langenheim, together with the list of coins and medals, be referred to the Curators with instructions to take a receipt for them from the Pennsylvania Museum of Industrial Art as a deposit in that institution

After some discussion the motion was carried

Letters of envoy were received from the Academie des Sciences, Cracow, Austria, Naturforschende Gesellschaft des Osterlandes Altenburg i S A Germany K Sächsische Gesellschaft der Wissenschaften, Leipzig, Société de Géographie, Berne, Switzerland Bath and West and Southern Counties Society, Bath, England, Meteorological Council, London, England, Iowa Geological Survey, Des Moines

Letters of acknowledgment were received from Dr Otto Donner, Helsingfors Finland (145), Russia Tashkent Observatory (144, 145), Maatschappij der Nederlandsche Letterkunde, Leiden, Z Holland (145), Société R de Géographie, Antwerp, Belgium (145), Naturforschende Gesellschaft, Schweiz Naturforschende Gesellschaft, Berne, Switzerland (145), Anthropologische Gesellschaft Vienna, Austria (145), Anthropologische Gesellschaft, Berlin, Prussia (145), Naturhistorische Verein, Bonn, Prussia (142, 144, 145), K Sachs Alterthumsverein, Dresden (142, 144), Naturhistorische Museum, Hamburg, Germany (*Trans*, xvii, 3), K Sachs Gesellschaft der Wissenschaften, Leipzig (142, 144, 145), Naturwissenschaftliche Verein, Osnabrück, Germany (144, 145), Literary and Philosophical Society, Liverpool, England (145), Prof W W Goodwin, Cambridge, Mass (144, 145, 146), American Mathematical Society (143), Mr James Douglas, New York, N Y (143, 146), Vassar Brothers' Institute, Poughkeepsie, N. Y (143, 146), Academy of Science, Rochester, N Y, (143, 146), Dr H Hartshorne, Germantown, Pa (143), Mr Joseph Wilcox, Philadelphia (143–146), Prof John F Carll, Pleasantville, Pa (143, 146), U S Naval

Institute, Annapolis, Md. (143, 146); Mr. T. L. Patterson, Cumberland, Md. (143, 146); Maryland Institute, Enoch Pratt Free Library, Peabody Institute, Prof. J E. Humphrey, Baltimore, Md. (143, 146), Smithsonian Institution, U. S. National Museum (143, 146), Dr. John S Billings, Washington, D. C (146); Agricultural Experiment Station, Morgantown, W. Va. (143), Ohio State Archæological and Historical Society, Columbus (143–146); State Geological Department, Frankfort, Ky. (143, 146); Agricultural Experiment Station, Knoxville, Tenn. (140, 144, 145); Prof. Joseph Le Conte, Berkeley, Cal. (143, 146); Historical Society of Southern California, Los Angeles (143, 146), California Historical Society (143, 145, 146), California State Mining Bureau (143), Prof. George Davidson, San Francisco, Cal. (143, 146), Prof. J. C. Branner, Stanford University, Cal. (143, 146); University of Wisconsin, Madison (136–141, 143–146); Prof. G. W. Hough, Evanston, Ill. (143); Kansas State Historical Society, Topeka (143, 146); Experiment Station Library, Lincoln, Neb. (143, 146); North Dakota Agricultural College, Fargo (143, 146); Bishop Cr. Carrillo, Merida, Yucatan (143, 146); Dr. Antonio Peñafiel, Mexico, Mex. (143, 146); Observatorio Astronómico Nacional Mexicano, Tacubaya (143, 146).

Accessions to the Library were reported from the Société Entomologique de Belgique, Bruxelles; Naturforschende Gesellschaft des Osterlandes, Altenburg i. S. A, Germany; Gesellschaft für Anthropologie, Ethnologie, etc., Berlin, Prussia; K. Gesellschaft der Wissenschaften, Göttingen, Prussia; K. Sächsische Gesellschaft der Wissenschaften, Leipzig; Società R. di Napoli, Napoli, Italia; Bath and West and Southern Counties Society, Bath, England; Meteorological Council, London, England; Natural History and Philosophical Society, Belfast, Ireland; Public Library, Salem, Mass.; Agricultural Experiment Station, New Haven, Conn.; University of the State of New York, Albany; Enoch Pratt Free Library, Baltimore, Md.; U. S. Coast and Geodetic Survey, Lighthouse Board, Washington, D. C.; Denison University, Granville, O.; Cincinnati Observatory, Cincinnati, O.; Iowa Geological Survey, Des Moines, Kansas State Agricultural College, Manhattan, Observatorio Magnetico Central, Mexico, Mex

The death of Prof James D Dana, New Haven, Conn (born Feb 12, 1813, died April 14, 1895), was announced

The President announced that he had requested Mr C Stuart Patterson, Prof E D Cope, Dr D G Brinton and Mr J G Rosengarten to prepare the obituary notices of Mr Vaux, Prof Ryder, Dr Ruschenberger and Prof Coppée respectively, and that they had accepted the appointments

An obituary notice of the late Mr Thomas H Dudley by Mr W John Potts was submitted and read by title

Dr D G Brinton read a paper on "The Protohistoric Ethnography of Asia Minor" The paper was discussed by Prof H V Hilprecht and others

Pending nominations Nos 1306, 1307, 1308, 1309, 1310, 1311, 1312, and new nominations Nos 1313, 1314, 1315, 1316 were read

The nominations for non resident members, recommended by Council and not acted on were placed in nomination

A report was read from the Special Committee in reference to the plates attached to Mr Lyman's paper As the report was not definitive, on motion the Committee was continued and requested to prepare a final report at the next meeting On further motion, as Mr Henry Phillips, Jr, a member of the Committee, was ill, Mr J Sergeant Price was appointed to act in his place

And the Society was adjourned by the President

Stated Meeting, May 3, 1895

President, Mr FRALEY, in the Chair

Correspondence was submitted as follows

Letters from Sarah J Farmer, Eliot, Me, and Mr James Lindsay, Kilmarnock, Scotland, the latter accompanying a book presented by him to the Society

Letters of envoy were received from the Geological Survey of India, Calcutta; Musée Teyler, Haarlem, Holland; K. Geologische Landesanstalt und Bergakademie, Berlin, Prussia, K. Sachsische Gesellschaft der Wissenschaften, Leipzig; Meteorological Observatory, New York, N. Y; Historical Society of Southern California, Los Angeles.

Letters of acknowledgment were received from the Societatea Geografica Română, Bucharest (144), Universitets-Bibliotheket, Christiana, Norway (145); Prof. Japetus Steenstrup, Copenhagen, Denmark (145); Naturwissenschaftliche Verein, Frankfurt a. O. (145); K. Gesellschaft der Wissenschaften, Gottingen, Prussia (*Trans.*, XIII, 3); Prof. G. Maspero, Paris, France (145); South African Philosophical Society, Cape Town (136–141); Hon. E. J. Phelps, New Haven, Conn. (119, 143); N. J. Historical Society, Newark (143, 146); Mr Henry C. Mercer, Doylestown, Pa. (144, 145, 146); Mr Jacob B Eckfeldt, (143, 146), Dr Charles Schaffer, Philadelphia (143, 144, 146); Maryland Historical Society, Baltimore (143)

Accessions to the Library were reported from the Naturwissenschaftliche Verein des Reg Bez, Frankfurt a. O.; Musée Teyler, Haarlem, Holland, Friesch Genootschap van Geschied, Oudheid, en Taalkunde, Leeuwarden, Netherlands, R. Museum van Oudheden, Leiden, Holland, I R. Accademia degli Agiati, Rovereto, Austria; Verein der Freunde der Naturgeschichte in Mecklenburg, Gustrow; Société Vaudoise des Sciences Naturelles, Lausanne, Switzerland, Naturwissenschaftliche Gesellschaft, St. Gall, Switzerland; M. J. de Rey-Pailhade, Toulouse, France; Philosophical Society, Cambridge, Eng.; Mr. James Lindsay, Kilmarnock, Scotland; R. Society of Antiquaries of Ireland, Dublin; American Antiquarian Society, Worcester, Mass.; Connecticut Historical Society, Hartford; Lenox Library, New York, N. Y.; University of Michigan, Ann Arbor; Agricultural Experiment Stations, Durham, N. H., Burlington, Vt., Jacksonville, Fla., Tucson, Ariz.; Observatorio Meteorológico Central, Mexico.

Dr. William H. Greene presented to the Society a Breguet metallic thermometer, made by Dr. Franklin Bache, from whom it was purchased by Dr. B. Howard Rand, whose widow presented it to the donor This form is no longer made, except as an apparatus for physical demonstration. It was the precursor of the modern metallic thermometer now rapidly coming into use

An obituary notice of the late James E Rhoads, M D, LL D, was read by Dr Henry Hartshorne

The President announced the death of Hamilton Andrews Hill, Boston, Mass, April 27, 1895, æt 67

Prof Cope read his paper on "Some New Forms of Whalebone Whales," as announced

Mr Julius F Sachse made a preliminary communication on "The Application of Electricity to Photography"

Pending nominations 1306–1316 and new nominations 1317–1329 were read.

The following report of the Special Committee on Mr Lyman's paper was presented

TO THE AMERICAN PHILOSOPHICAL SOCIETY

The Special Committee to whom was referred the paper by Mr Benjamin S Lyman read at a late meeting of the Society for the purpose of considering the subject of publishing the plates accompanying the said paper respectfully report that they have carefully considered the matter referred to them and have reached the following conclusions upon the subject

1 The plates consist of thirty four maps taken bodily from the book of plans published by the Geological Survey of Pennsylvania all of which have been copyrighted under the Laws of the United States and therefore under no circumstances can be published without the written consent of the Board of Survey, witnessed by two or more witnesses, which consent does not accompany the papers

2 There is a standing rule of the Society from which it has not deviated, that all its publications must be of original matter, and any papers, drawings or maps which have been previously printed or published, cannot appear in its Proceedings or Transactions This is an insuperable objection, and however much we personally desire to accommodate Mr Lyman, it is impossible for us, even if the expense should be borne by him, to report in favor of printing or publishing the maps although he is fully entitled, to have his paper printed in the *Proceedings* as an original contribution read at one of the stated meetings We therefore submit the following resolutions for adoption by the Society

"*Resolved*, That the paper presented by Mr Benjamin S Lyman be published in our *Proceedings* but that for the reasons set forth in the report of the Committee, the thirty-four maps accompanying his paper be not included in the publication "

"*Resolved*, That the Special Committee be discharged from the further consideration of the matter "

WILLIAM H GREENE,
J SERGEANT PRICE,
ALBERT H SMYTH

Prof. Greene made a statement in reference to the paper of Mr. Lyman, expressing his inability to speak of its special value as a geological contribution.

Mr. Lyman stated that he had received a verbal permission to print the copyrighted maps.

Prof. Cope spoke in favor of publishing the maps accompanying Mr. Lyman's paper.

Mr. J. Sergeant Price explained the reason for referring the question of publication to a Committee.

Prof. Cope moved that the Special Committee be discharged, and that a Committee of Experts be appointed to consider the publication of the plates and the paper. Carried.

The President subsequently appointed Messrs Heilprin, Ingham and Platt.

And the Society was adjourned by the President.

PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

HELD AT PHILADELPHIA FOR PROMOTING USEFUL KNOWLEDGE.

VOL. XXXIV. JULY, 1895. NO. 148

HENRY M. PHILLIPS PRIZE ESSAYS.

[CIRCULAR ISSUED BY COMMITTEE.]

PHILADELPHIA, 104 SOUTH FIFTH ST, MAY 1, 1893.

The American Philosophical Society held at Philadelphia for the promotion of useful knowledge has the honor to announce that an award of the Henry M Phillips Prize will be made during the year 1895; essays for the same to be in the possession of the Society before the first day of January, 1895. The subjects upon which essays are to be furnished by competitors are as follows:

1. The sources, formation, and development, of what is generally designated the Common Law of England

2. The theory of the State, treated historically, and upon principle, with a discussion of the various schools of classical, mediæval, and modern thought, upon the subject

3. The historical and doctrinal relations of the Roman Law and the English Law, illustrated by parallels and contrasts.

The Prize for the crowned essay on either of these subjects will consist of the sum of five hundred dollars lawful gold coin of the United States, to be paid upon the awarding of the prize. The Society invites attention to the laws governing said prize, which accompany this circular.

RICHARD VAUX, *Chairman*;
HENRY PHILLIPS, JR.,
WILLIAM V MCKEAN,
FURMAN SHEPPARD,
JOSEPH C. FRALEY,
—AND—
FREDERICK FRALEY, *President of the Society*, } *Ex-officiis.*
J. SERGEANT PRICE, *Treasurer of the Society*, }
} Committee on the Henry M Phillips Prize Essay Fund

The essays must be sent, addressed to Frederick Fraley, President of the American Philosophical Society, Hall of the Society, No. 104 South Fifth Street, Philadelphia, Pa,

EXTRACT FROM THE LAWS

THE HENRY M PHILLIPS PRIZE ESSAY FUND

Miss Emily Phillips, of Philadelphia, a sister of Hon Henry M Phillips deceased, presented to the American Philosophical Society held at Philadelphia for Promoting Useful Knowledge, the sum of five thousand dollars for the establishment and endowment of a Prize Fund, in memory of her deceased brother, who was an honored member of the Society The Society accepted the gift and agreed to make suitable rules and regulations to carry out the wishes of the donor, and to discharge the duties confided to it In furtherance whereof, the following rules and regulations were adopted by the Society

First The Prize Endowment Fund shall be called the "Henry M Phillips Prize Essay Fund"

Second The money constituting the Endowment Fund, viz, five thousand dollars, shall be invested by the Society in such securities as may be recognized by the laws of Pennsylvania, as proper for the investment of trust funds, and the evidences of such investment shall be made in the name of the Society as Trustee of the Henry M Phillips Prize Essay Fund

Third The income arising from such investment shall be appropriated as follows

(*a*) To making public advertisement of the prize and the sum or amount in United States gold coin, and the terms on which it shall be awarded

(*b*) To the payment of such prize or prizes as may from time to time be awarded by the Society for the best essay of real merit on the Science and Philosophy of Jurisprudence, and to the preparation of the certificate to be granted to the author of any successful essay

Fourth Competitors for the prize shall affix to their essays some motto or name (not the proper name of the author, however), and when the essay is forwarded to the Society, it shall be accompanied by a sealed envelope containing within the proper name of the author, and, on the outside thereof, the motto or name adopted for the essay

Fifth At a stated meeting of the Society in pursuance of the advertisement all essays received up to that time shall be referred to a Committee of Judges, to consist of five persons, who shall be selected by the Society from nomination of ten persons made by the Standing Committee on the Henry M Phillips Prize Essay Fund

Sixth All essays may be written in English French, German, Dutch, Italian, Spanish or Latin but if in any language except English, must be accompanied by an English translation of the same

Seventh No treatise or essay shall be entitled to compete for the prize that has been already published or printed, or for which the author has received already any prize or profit or honor, of any nature whatsoever

Eighth All essays must be *clearly* and *legibly* written and on one side of the paper only

Ninth The literary property of such essays shall be in their authors, subject to the right of the Society to publish the crowned essays in its *Transactions* or *Proceedings*

Tenth A Standing Committee to consist of five members appointed by the President and *ex officio* the President and the Treasurer of the Society shall continue in office during the pleasure of the Society and any vacancies that may occur in said Committee shall be filed by new appointment by the President

Eleventh The said Committee shall have charge of all matters connected with the management of this endowment and the investment of the same and shall make such general rules for publishing the terms upon which said prize shall be competed for, and the amount of the said prize, and if it shall deem it expedient, designate the subjects for competing essays It shall report annually to the Society, on the first Friday in December, all its transactions with an account of the investment of the Prize Fund, and of the income and expenditures thereof

The following named gentlemen were selected by the Society as a Committee of Judges J Randolph Tucker of Virginia James C Carter, of New York, George F Edmunds of Vermont, E J Phelps of New Haven, Conn , C Stuart Patterson, of Philadelphia, Pa

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THE REPORT AND AWARD

OF THE

COMMITTEE OF JUDGES

ON THE

HENRY M. PHILLIPS PRIZE ESSAYS

— —

To the HON FREDERICK FRALEY President of the
American Philosophical Society

Sir —We, the undersigned, having been together with the Hon J Randolph Tucker, of Virginia, selected by the American Philosophical Society as a Committee of Judges to whom were referred the several essays sent to the Society in competition for the Henry M Phillips Prize under the terms of the circular issued by the Society on the first day of May, 1893 have the honor to report

That in the performance of the duty imposed upon us, we met at the hall of the Society on Monday, 8th April, 1895, and on Tuesday, 9th April, 1895, and that we there read and considered the several essays submitted to us and hereinafter referred to

Greatly to our regret the Hon J Randolph Tucker was unavoidably prevented from meeting us and affording to us the benefit of his accurate knowledge and sound judgment

Upon the first of the subjects designated by the Society in its circular of 1st May, 1893, to wit "The sources, formation and development of what is generally designated 'The Common Law of England,'" three essays were submitted for our consideration, entitled and designated as follows

No 1 'The sources, formation and development of what is generally designated 'The Common Law of England'" By "Viking"

No 2 "The sources, formation and development of what is generally designated 'The Common Law of England'" By "Vox Populi."

No 3 "The sources, formation and development of the Common Law" By "Imogene"

Under the second of the subjects designated in the Society's circular of 1st May, 1893, to wit "The theory of the State, treated historically and upon principle, with a discussion of the various schools of classical, mediæval, and modern thought upon the subject," five essays were referred to us, entitled and designated as follows

No 1 "The Theory of the State" By "Ayala"

No 2 "The Nature of the State" By "Cegra"

No 3 "The Theory of the State" By "Amicus Plato, Amicus Socrates, Sed Magis Amica Veritas"

No 4 'The Theory of the State" By "Civis XXV"

No 5 "The Theory of the State, treated historically and upon principle, with a discussion of the various schools of classical, mediæval, and modern thought upon the subject" By 'A Sovereign"

Upon the third of the subjects designated in the Society's circular of 1st May, 1893, to wit 'The historical and doctrinal relations of the Roman Law and the English Law, illustrated by parallels and contrasts," no essays were submitted to us

As a preliminary to the determination of the relative merits of the several essays, we concluded that our duty to the Society forbade us to set the seal of its approval upon any essay which should fall short of a very high standard of excellence

We are unanimously of opinion and we report that no one of the essays referred to us in competition for the first subject designated by the Society, to wit "The sources, formation, and development of what is generally designated 'The Common Law of England'" is of sufficient merit to justify the award of a prize to it We, therefore, recommend that the three essays submitted in competition upon this subject be returned to their respective authors

We have carefully considered and compared the five essays referred to us in competition for the prize to be awarded for the best essay upon the second subject stated in the circular of the

Society, to wit "The Theory of the State, treated historically and upon principle, with a discussion of the various schools of classical, mediæval and modern thought upon the subject"

Understanding the words 'real merit' as used in the third regulation (*b*) of the Society, to be taken in the sense of high excellence, as a work of scholarship considered chiefly with reference to its logical character and literary execution, while not wholly ignoring its soundness of theory, we are unanimously of opinion that having regard to the evidence which it presents of historical research, to its accuracy of thought and to its originality of treatment the essay entitled 'The Theory of the State' by 'Amicus Plato, Amicus Socrates, Sed Magis Amica Veritas,' is entitled to the highest consideration, and is worthy of the great honor of being crowned by the Society

We are also unanimously of opinion that the essay entitled 'The Nature of the State,' by "Cegra" is worthy of high commendation, and that honorable mention may justly be made of it

While we heartily concur in awarding the prize and in making honorable mention of the essays, to which we have referred, we are not to be understood as expressing either on behalf of the Society or upon our own behalf any assent to the historical deductions, or conclusions, or any approval of the theories of government or of politics, stated in either of the commended essays

We deem our duty to be fully performed when we report to the Society the essays deemed to be worthy of crowning or of honorable mention, with the designation of those essays by that motto or name which the respective authors have affixed thereto, and we do not regard it to be within the scope of the authority committed to us to open the sealed envelopes containing the names of those whose essays we deem to be worthy of honor

Signed this 17th day of May, 1895

JAMES C CARTER,
GEORGE F EDMUNDS,
E J PHELPS,
C STUART PATTERSON

The report of the judges having been presented to President Fraley, the envelopes containing the names of the successful competitors were opened by Mr Fraley and J Sergeant Price, Esq, and it was found that the winner of the prize is George H Smith, Esq, of Los Angeles California, and that the essay of which Honorable Mention is made was written by Westel W Willoughby, of Leland Stanford University, Palo Alto, California

Approved by the Society,

Frederick Fraley, *President*

J Sergeant Price, *Treasurer*

THE THEORY OF THE STATE.

BY

GEORGE H. SMITH, Esq.,
OF LOS ANGELES, CALIFORNIA.

THE CROWNED ESSAY FOR WHICH THE PRIZE OF FIVE HUNDRED DOLLAR
WAS AWARDED ON MAY 17, 1895, FROM THE HENRY M. PHILLIPS PRIZE
ESSAY FUND, BY THE COMMITTEE OF JUDGES APPOINTED
BY THE "AMERICAN PHILOSOPHICAL SOCIETY HELD
AT PHILADELPHIA FOR THE PROMOTION
OF USEFUL KNOWLEDGE."

COMMITTEE OF JUDGES:

J. RANDOLPH TUCKER, VIRGINIA,
JAMES C. CARTER, NEW YORK,
GEORGE F. EDMUNDS, VERMONT,
E J. PHELPS, NEW HAVEN, CONN.
C STUART PATTERSON, PHILADELPHIA, PA.

PREFACE

In submitting to the American Philosophical Society the following essay upon the Theory of the State I desire to say a word in explanation of the unusual number of quotations used and the consequent voluminousness of the notes This course was suggested to me by the example of Roscher in his *Political Economy* and has been adopted as apparently the best method of considering the theory of the State, at once historically and upon principle as required by the offer of the Society For in this way only has it been practicable for the author to develop his own theory briefly and consecutively and at the same time to review other theories

I also desire to say a word in apology for or rather in vindication of the somewhat free and plain spoken criticisms of the theories of others that I have found it necessary to make In this I have followed the example of the older writers on the theory of the State from Aristotle down, whose custom (to use a familiar phrase) has always been to handle the theories of other writers without gloves and by whom similar treatment has never been regarded as a just subject of complaint I admit, however that the practice is, at the present day, open to some objections For, as will be seen the theories of modern publicists are of a delicate and somewhat artificial structure, little suited to stand the rough handling of logic and, in fact, existing mainly by mutual comity This is especially true in England, and in this country where jurists and publicists have, for over half a century been absolutely dominated by Austin's false and pernicious theory, and where, consequently that theory must necessarily be attacked in order to gain even a hearing

And especially I desire that these criticisms may not be regarded as evidence of any malice or ill feeling on my part On the contrary, the two authors that I criticise most severely, Hobbes and Austin, I have ever regarded with the most profound admiration, and their works, though false in conclusions, yet seem to me, on account of their logical method, and the profound and accurate analytical power displayed in them, beyond comparison, the most valuable contributions made to political science in modern times, and I freely confess that from them I have learned more than from all other writers, Aristotle excepted

I may say, therefore, in the language of the old adage (which I adopt as the motto of my work) "*Amicus Plato, amicus Socrates, sed magis amica Veritas*"

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INTRODUCTION

§ 1 *The Theory of the State Defined and its Scope Determined*

The theory of the State in the proper and most comprehensive sense of the term would seem to involve the consideration of all matters affecting the political and social life of man and to speak accurately, should therefore be regarded as coextensive with the whole of political science It will, however be more convenient in the present state of philosophy to regard it as confined to the consideration of certain political problems that are broadly distinguished from the rest of political science by their fundamental character and by the fact that they stand as it were at the threshold of the subject and imperatively demand solution as a condition even of entrance into it

These are to determine (1) the nature of the State (2) its functions (3) its rights or rightful powers and (4) the principles that should govern its political organization

In addition to these subjects—which the German publicists include under the head of Public Right (Staatsrecht *Jus Publicum*) regarding it as a department of Jurisprudence or Natural Right—they include in the theory of the State another subject which they call *Politik* (politique) This term is the equivalent of the English word Politics but as with us the term is used after Aristotle to denote the whole of political science it will be better to translate the German word by the term Policy The nature of this subject and its relation to the theory of the State will be understood by reference to the passages cited in the note (*a*) *

In the following exposition of the theory of the State it will be found most convenient in general to consider the historical aspect of the subject in connection with the several topics as they arise or in the sequel after the exposition of the theory has been completed But in exception to this general course it will be found convenient and even necessary to consider in advance by way of introduction certain theories now generally prevailing by which our investigations may otherwise be embarrassed

§ 2 *Of Certain Current Political Theories*

There are certain traits common to modern political writers—and from which hardly any are exempt—that have profoundly and I think deleteriously, influenced political theory These are *bias* or prejudice and *illogicalness* or disregard of logic—two infirmities very closely united For—as observed by logicians—if the mind be wholly unbiased it spontaneously observes the true method of reasoning But where bias or prejudice intervenes there is no fallacy so absurd that it may not entrap the acutest intellect For prejudice—as expressed in the popular proverb The wish is father to the thought —is the native and congenial soil of logical fallacy against which in the absence of this powerful and malignant influence nature itself without special training is in general a sufficient protection Of the truth of this observation the writings even of the most distinguished political theorists—such for instance as Hobbes Kant Austin not to speak of lesser men—furnish as will be seen numerous and striking illustrations So that in place of the trivial and often ridiculous examples used by logical writers to illustrate the different kinds of fallacies—and which perhaps have greatly contributed to bring logic into the contempt and consequent disuse into which it has fallen in modern times (*b*)—there might be readily collected from the most distinguished sources examples of all of them that have proved their efficiency by deceiving not only the less intelligent reading public but also the great philosophers that invented them

---

* All notes indicated by letters will be found at the end of Introduction Those occurring in a Chapter at the end of the Chapter

Hence it has resulted that the political theories current in modern times are in general mere expressions of popular sentiment prevailing at the time of their inception modified more or less by the idiosyncrasies of their respective authors and by subsequent changes of popular opinion and the origin or original genesis of any given theory is therefore generally to be sought not in the formal reasoning adduced in its support but in the events and character of the period in which it originated and in the character mental and moral or as it may be called the personal equation of its author Hence also it will be found that the reasoning of political writers is in general merely polemical in other words designed *not to direct the author's investigations or to test the correct*ness of his conclusions but to establish some preconceived opinion consciously or unconsciously imposed upon him by his environment or by authority For in modern times on nearly every great political question men take sides and range themselves or are ranged by fortune into parties and henceforth devote themselves not to investigating but to establishing the *dogmas to which they have become fortuitously attached* Hence it may be said without much exaggeration that with regard to political and social problems men generally have ceased to be reasoning and become mere arguing creatures and that there is hardly a writer on the theory of the State since Aristotle that has approached the subject in the true scientific spirit without bias and with entire indifference as to the conclusions to which his investigations might lead him (*c*)

From this infirmity almost universal of political writers there have resulted certain political theories which though wholly unverified have come to be almost universally received and are so intrenched in the sentiments and prejudices of the people or classes of the people as almost to preclude the possibility of a fair and unbiased consideration of the subject of politics

This opinion will doubtless be *caviare* to the general and for most readers it will be hard even to conceive the possibility of its being true

But the most incredulous may be readily convinced of the justice of the opinion if he will follow us in a critical examination of some of the theories referred to and of the arguments adduced in their support

Among these the most conspicuous is the doctrine of sovereignty as generally received in modern times and to this we will first devote our attention This doctrine will be found to rest for its plausibility upon certain purely logical fallacies and it will therefore require no special knowledge of political science to investigate its claims to credibility On this account and because it stands in the way of an intelligent investigation of our subject the Introduction presents the most appropriate place for its consideration

§ 3 *The Doctrine of Absolute Sovereignty* (*d*)

The doctrine of absolute sovereignty so universally asserted and apparently believed would seem to consist of a single proposition and the several forms in which it is asserted to be merely unessential variations of the same doctrine But this is far from being the case for the term *sovereign* on which the meaning of the term *sovereignty* depends has several essentially distinct meanings and to each of these there corresponds a distinct and independent theory (*e*)

Hence the so called doctrine of sovereignty consists in reality of several theories that must be distinguished from each other and which it will be found are not only essentially different but mutually inconsistent

(1) Originally the term sovereign denoted merely a monarch or single ruler and the corresponding doctrine of sovereignty simply asserted the absolute or unlimited power of the monarch or as more usually expressed the Divine Right of Kings In this the original and proper sense of the term sovereignty—being the power of a single man—is *ex vi termini* indivisible But that it is absolute is a proposition asserted only by extreme royalists who may now be regarded as practically extinct

(2) But afterwards with the progress of constitutional government in Europe the term sovereign came to denote not merely a monarch but the government or political organization of the State whether consisting in an assembly or of several departments and the doctrine of sovereignty thus assumed the form of asserting the unlimited power of the government in its corporate capacity But obviously the term sovereign is here used in a secondary and improper sense, essentially distinct from its original signification for the government thus regarded is a body politic or corporation, which is rightly defined as a fictitious or imaginary person and the power of this fictitious sovereign is equally fictitious or imaginary For human power can exist only in actual human beings, and though for convenience we may speak of the power of the government, as of that of any other corporation yet the expression is always to be understood as really denoting the concurrent powers of certain individuals in the government Thus taking for illustration the case of a simple sovereign assembly and regarding this as *the sovereign* when we

speak of its power we mean nothing more than the united powers of a concurring majority And hence instead of regarding as sovereign the fictitious entity that we are accustomed to regard as such we might with greater propriety say that the actual sovereign is the majority that acts and that with every change in the constitution of such majority, we have a different sovereign (*f*)

Hence it is easy to perceive that the doctrine of corporate sovereignty—which is the form in which the doctrine of sovereignty is now most usually asserted—is inconsistent with the original doctrine For the latter assumes the existence of a single supreme ruler or sovereign whose power is certainly indivisible and may be absolute but the latter rests upon the assumption that there are several officers or rulers in each of whom political power is vested, and hence that the sovereign powers of the government are not only divisible, but actually divided and consequently that the power of each is limited by the condition that others shall concur in its exercise Accordingly all the great constitutional struggles that have occurred in history have been in effect contests between the doctrine of *personal* and that of *corporate* sovereignty, and the triumph of the latter is justly regarded as having finally overthrown the former

(8) But latterly the doctrine of corporate sovereignty has been asserted in another form that bids fair in this country and in others inclining to republicanism to supplant the doctrine as originally expressed This which may be called the doctrine of the sovereignty of the State or of the people, results from the distinction now generally recognized, between the State and the government and asserts that the sovereignty is vested, not in the latter but in the former

But this doctrine must be clearly distinguished from another that passes by the same name In all liberal governments either all, or a large proportion of the adult male citizens participate in electing representatives And in this country the electors are also vested by law with the power of changing the constitution of the government, either by constitutional conventions or otherwise Hence, when we speak of the sovereignty of the people, reference is generally made to the electors only and not to the people generally, or the State as distinguished from the government or political organization of the State But obviously the electors are part of the political organization or government, and hence the doctrine of sovereignty of the people, in this sense does not differ essentially from the doctrine of corporate sovereignty, as stated in the preceding paragraph

Hence, to avoid this ambiguity, the expression "the sovereignty of the people," should be disused and instead of it we should speak only of the "sovereignty of the State," by which is meant the sovereignty of the whole people, or the State as distinguished from the political organization of the State or government

Of the two forms of the doctrine of sovereignty last adverted to—namely, the doctrine of corporate sovereignty and that of the sovereignty of the

State—it will be observed that each is at once more liberal and less definite than its predecessor and that the last is altogether without significance, except in so far as it repudiates the notion of unlimited political power either in a single ruler or in the government and thus while preserving the name it in fact altogether denies the doctrine of absolute sovereignty It would therefore be altogether unobjectionable were it not that indefinite theories that to wise men mean nothing to the multitude mean anything that passion and prejudice may suggest and hence that such theories constitute the most fruitful cause of political heresies and revolutions

(4) Finally under the influence of the more enlightened spirit and the more profound realization of the principle of liberty and of human rights that characterizes our modern civilization the term sovereign has received a still wider extension of meaning and is now often used to denote mere abstractions as when we speak of the sovereignty of Reason or of Justice or Right or of Public Opinion Accordingly the doctrine of sovereignty has undergone a still further and more satisfactory evolution into the doctrine of the sovereignty or supremacy of the law or of right But obviously this use of the term is purely metaphorical and merely expresses the notion that justice or right is at once the paramount standard of the rectitude of human conduct and the source of all rights, public and private This is in effect the doctrine expounded in this work and to render the expression of it entirely unobjectionable it is only necessary that the name as well as the substance of the doctrine of sovereignty be abandoned *(g)*

(5) It is also to be observed that in each of the above expressions of the doctrine of sovereignty—with the exception of the last which cannot be regarded as such—there is another ambiguous term which has been the source of much confused political thinking and serious political error This is the term power which is habitually used to denote not merely *actual* power or might but also *rightful* power or power that the government or individual ought to have or in other words right Hence accordingly as we use the term power each of the propositions stated is susceptible of two constructions and thus under the apparently single proposition that the sovereign power is unlimited we have included six essentially different doctrines that to avoid confusion ought to be but which in general are *not* distinguished by political writers

And to add to this confusion there is in the brief proposition referred to also another ambiguous term namely the term *unlimited'* —a term altogether without meaning until we determine the nature of the limit referred to which may be either mere force or law in the sense of *lex* or law in the sense of *jus* or theoretical right And thus each of the six propositions into which as we have seen, the doctrine resolves itself may branch out into several others

§4 *General Observations Upon the Doctrine of Sovereignty*

Of the several forms of the doctrine of sovereignty above enumerated—namely the doctrine of *Personal* sovereignty of *Corporate* sovereignty of the sovereignty of the State and of the sovereignty of Right or of the Law—the first—now happily obsolete—is the only one that has any definite significance for in this form of the doctrine the *sovereign* referred to is an actual person whose power is necessarily indivisible and may be despotic. But in the second form of the doctrine—namely that of corporate sovereignty—the *sovereign* referred to is a body politic or corporation a purely fictitious person whose supposed power is equally fictitious That the fictitious and imaginary power of this fictitious and imaginary sovereign is unlimited and indivisible is a proposition without significance and is to be regarded as a mere verbal trick or contrivance to conceal the actual fact that in all governments of more than one the supreme political powers are in all cases divided among several officers or departments and that the power of each officer or department is necessarily limited by those of the others and hence that in all such governments the proposition that the sovereign power is necessarily unlimited and indivisible is in fact untrue The doctrine of *corporate* sovereignty must therefore be regarded as in effect a denial of the true form of the theory which is that of *personal* sovereignty *A fortiori* are these observations true of the doctrine of the sovereignty of the State—where the sovereign is conceived to be the unorganized mass of the people of all ages sexes and degrees of mental capacity without political power or capacity of exercising it—and also of the doctrine of the sovereignty of Right or Law where the imagined sovereign is a mere abstraction

These obvious considerations are sufficient of themselves to dispose of the doctrine of absolute sovereignty which—except in its now happily obsolete form as asserting the divine right of kings—is altogether destitute of definite signification or in other words using the term in its original sense is merely *nonsense* (*h*) This is strikingly illustrated by the arguments that have been adduced in its support which for the purpose of further illustrating our thesis we will next consider commencing with the celebrated argument of Hobbes

§5 *Hobbes Argument*

Hobbes clearly perceives the nature of the fundamental problem of political science which is to determine not the *actual* but the *rightful* power of the government or in other words the power with which the government *ought* to be vested As stated by him the question to be considered is What are the rights and just power or authority of a sovereign? * And accordingly his conclusion—which is that the rights or just power of the sovereign over the lives and fortunes of the subject is unlimited, and that there is a corresponding *duty* on the part of the subject to obey—in words precisely corresponds to the question thus stated

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* *Leviathan* Introduction

But to reach this conclusion Hobbes is compelled to assume the existence of an imaginary contract or covenant between the individual members of the State—not with the sovereign but with each other —by which this unlimited right or power is conferred upon him which is a manifest *petitio principii* of the most glaring kind belonging to the class of what are called *legal* fictions which are erroneously supposed to be peculiar to lawyers—but are also used or rather misused by philosophers These consist in the conscious assumption as true of propositions known to be false—as for instance in the legal maxim that the husband and wife constitute one person or in the essentially similar proposition involved in the notion of a corporation or body politic that the several members of a society as for instance the State constitute a person (i)

But the assumption of a social contract is not of itself sufficient to establish the desired conclusion For it may be reasoned that certain conditions are necessarily implied in such a contract—as for instance that performance by the sovereign of his functions is a condition of the contract or even that the power of the sovereign might be divested in the same way it was conferred or that other consequences might follow such as are in fact drawn by Locke Rousseau and others Hence it was assumed by Hobbes that the supposed contract of the individual members of the State is unconditional that it is irrevocable and finally—to cover all points—that its effect has been to transfer to the sovereign not only all their powers and strength but even their wills so as to reduce all their wills by plurality of voices to one will and thus to create not merely a consent or concord but a real unity of them all in one and the same person * From which he concludes that every subject is author of all the actions and judgments of the sovereign † And that nothing that the sovereign representative can do a subject on what pretense whatever can properly be called injustice or injury because every subject is author of every act the sovereign doth Hence the killing of Uriah by David was not an injury to Uriah because the right to do what he pleased was given him by Uriah himself ‡ who being the author of the act in fact—upon the principle *qui facit per alium facit per se*—committed suicide

This extravagant conception of Hobbes is revived in modern times by Mr Bluntschli and others the fundamental principle of whose doctrine is that the State is an *organised being* or an *organism* having a soul and body a conscience and active organs and also a will which is different from the individual wills of all individuals and different from the sum of them and even that it is of the masculine gender in fine that it is a moral organized masculine personality or more shortly the political original national person of a definite country ' (Bluntschli s *Theory of the State*, Bk 1 Ch 1) Or as expressed by an other It is an organism a conscious organism a moral organism a moral personality (Mulford s *The Nation* Ch 1) Obviously all this is merely metaphor and expresses nothing more than the admitted fiction involved in the notion of a corporation in regarding it as a fictitious or ideal person There is indeed a very close analogy between States or other corporations and natural persons but it is very unsafe to reason from this analogy and to neglect to observe the essential difference between the two not ons may involve the most serious errors An instance of a great judge being misled by it is furnished by the decision of Chief Justice Marshal in the celebrated Dartmouth College case 4 *Wheat* 508

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* *Leviathan* 84 † *Id* 86 ‡ *Id* 101 10

In that case the principle was asserted that a charter to a corporation is a contract which under the constitutional provisions forbidding the enactment of laws impairing the obligation of contracts could not be altered by the State and the principle was held to apply to the charter of the plaintiff—an eleemosynary corporation But it is clear that strictly speaking a corporation—which is a purely fictitious or imaginary being—cannot itself have any rights and that what we call the rights of a corporation are in fact the rights of its stockholders creditors or other individuals beneficially interested and hence that the constitutional provision can have no application if there are no such persons—as was in fact the case before the court Hence in that case—as in all others where property has no other owner—the beneficial interest in the property of the corporation was in the State and could deal with it as it pleased Or to state the proposition more generally all property held for charitable purposes—at least after the death of the donors—belongs to the State and may be disposed of by it according to its own views of what is right and proper

A similar question was presented by the proposed legislation in England for the disposition of the property of the old trade companies of London which survived only for the purpose of holding the property vested in them several hundred years ago for charitable purposes This legislation was vehemently opposed as an invasion of private rights but it is very evident the funds being devoted to general charity that only the public had an interest in it

Here again therefore another example of *petitio principii* is presented consisting in the monstrous assumption that not only the rights of the subjects but even their wills and their persons are, in some mysterious way transferred to and incorporated in the fictitious Leviathan and that there is thus effected a real unity of them all in one and the same person who is thus enabled to perform the wills of them all *—a doctrine certainly as extravagant as that of the actual conversion of bread and wine into the body and blood of Christ which Hobbes is never tired of ridiculing †

But independently of these fallacies in the argument—which were it not for their actual influence on political speculation would be too transparent to notice—the conclusion itself presents a peculiarly artful and effective example of the fallacy of *irrelevant conclusion* or *ignoratio elenchi* For while it seems to respond to the problem propounded it does not really do so but when construed according to Hobbes own definitions of the terms used assumes a very different meaning or rather becomes devoid of all material significance For as defined by Hobbes *right* signifies merely the absence of restraint imposed by law (*lex*) * Hence the proposition that the power of the sovereign is not limited by law regarded as the expressed will of the sovereign simply asserts the truism equally applicable to the sovereign and all others that a man s power cannot be said to be limited by his own will So with regard to the term *just* the definition of injustice he says is no other than the not performance of contract and whatever is not unjust is just † Hence the conclusion merely asserts that the power of the sovereign is not limited by contract Which according to Hobbes theory is very true for he is not party to the social contract and is not bound by any other for want of a superior power to enforce it ‡

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* *Leviathan* 84

† *Id* 44 276 294

So also with regard to the duty of obedience in the subject apparently asserted—this according to Hobbes definition means nothing more than the fear of evil consequences to be inflicted by the sovereign for disobedience and *ex vi termini* must be admitted to exist precisely to the extent that there is ground for such fear

Hence translated into plain English the conclusion asserted is nothing more than that the so called right of the sovereign is an unbridled or lawless power to which prudence demands of the subject that he should submit in order to avoid worse consequences This is an altogether different proposition from that which the author undertook to establish and which he apparently asserts viz that the *right* of a sovereign over the fortunes and the persons of his subjects and the corresponding duty of the subject to obey is unlimited but nevertheless the conclusion is habitually used by him and others as though equivalent to that proposition

In fine the theory of Hobbes rests wholly upon the assumption that the will of the government is the paramount moral standard by which justice and injustice and right and wrong generally are to be determined and from this it follows inevitably that in the proper sense of the term neither the sovereign nor—in relation to the sovereign—the subject can have any rights or be subject to any duties or obligations (*j*)

§ 6 *Kant s Argument*

Kant like Hobbes asserts the absolute or unlimited power of the sovereign over his subjects and like him is guilty of a manifest *petitio principii* in his reasoning which is as follows It is the right of every citizen to have to obey no other law than that to which he has given his consent or approval "* But the legislative power is to be regarded as "the united will of the people,"† and as necessarily including as such the will of every citizen Hence, every law is to be regarded as an expression, not only of the will of the government, but of every individual in the State, and hence, "resistance on the part of the people of the State to the supreme legislative power of the State is in no case legitimate, for it is only by submission to the universal legislative will that a condition of law and order is possible Hence, there is no right of sedition, and still less of rebellion, belonging to the people "‡ "The will of the people is naturally un unified, and consequently it is lawless, and its unconditional subjection under a *sovereign* will, uniting all particular wills by one law, is a fact which can only originate in the institution of a supreme power and thus is public right founded. Hence, to allow a right of resistance to this sovereignty, and to limit its supreme power, is a *contradiction;* for in that case it would not be the supreme legal power if it might be resisted, nor could it primarily determine what shall be publicly right or not This principle is involved *à priori* in the idea of a political constitution generally, as the conception of the practical Reason "§

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* Right is that liberty which the law leaveth us (*De Corp Politico* Bk II Ch x § 8)

† *Lev* p 72

‡ *Ib* 8

This, as will be seen, is precisely the argument of Hobbes, with its native enormities draped under a cloud of words Its whole validity rests upon the manifest fiction that *the will of the State* is the *united will* of all the people, to which it may be answered that what is called "the will of the State," is merely the will of the individuals who control the State, and that the will of these rulers does not necessarily, or even generally, concur with the wills of the citizens, even where these happen to concur. Furthermore, it is manifest that the term will is purely relative, and implies some actual creature in whom it exists. Hence, the State, properly speaking, cannot be said to have a will; and when we speak of the will of the State, or of the government, or of the legislature, we use the term in a figurative sense, based upon the conception of the State as a body politic, or in other words as a fictitious person (*k*)

§ 7. *Huxley's Argument.*

Another argument I find attributed to Professor Huxley in a collection of essays lately published, under the singularly inappropriate title of "A Plea for Liberty." But whether he is in fact responsible for it, or for the use made of it by the author, I do not know. It occurs in the essay entitled "The Limits of Liberty," by Mr. Donisthorpe, and is as follows:

"The power of the State may be defined as the resultant of all the social forces operating within a definite area. 'It follows,' says Professor Huxley, *with characteristic logical thoroughness*, 'that no limit is, or can be theoretically set to State interference'" (*l*)

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* *Philosophy of Law*, p. 167

† *Id*, p. 166.   ‡ *Id.*, p 176.   § *Id.*, p 256.

It is however obvious that the author of this argument whether Prof Huxley or another fails to distinguish between the two senses of the term *power* to which we have alluded namely that of *actual* power or might and that of *jural* power or right In the premises of the argument it is used in the former sense and in the conclusion in the latter—thus presenting—instead of a characteristic thoroughness of logic —a striking example of that most common and most destructive of all fallacies an ambiguous middle

But independently of this the argument is obviously a mere rhetorical artifice for the term forces in its proper sense denotes merely physical forces that operate under fixed laws from which from given data the resultant can be mathematically determined But when we speak of social or moral forces or of the resultant of such forces the term is used in a sense purely metaphorical Hence the proposition of Prof Huxley is to be regarded as only figuratively true and must be translated into plain English before it can be logically serviceable But thus translated, no definite meaning can be assigned to it

The attempt is however made by Mr Donisthorpe to render the proposition more definite by defining the sovereign as consisting of what he calls ' the effective majority or *force majeure* But even with this explanation the doctrine still remains indefinite

What is the effective majority or superior force—*force majeure*—referred to? To this two answers are given one by the author cited and the other by a writer to whom we will presently refer and accordingly as we take the one or the other the doctrine will assume an essentially different form

(1) According to Mr Donisthorpe—as will be seen by reference to the passage cited in the note—this *force majeure* or superior force is necessarily vested not in the unorganized State but in the government and "*the effective majority* is but another name for the individuals who control the government , and thus apparently we arrive again at the doctrine of governmental absolutism or of the unlimited power of the government as asserted by Hobbes But this though supposed by the author to be the case is not so For as we have seen Hobbes doctrine is that the "rights or just authority ' of the government are unlimited whereas the present writer unequivocally defines his proposition as asserting only that the *actual* power or force of the government is unlimited—a proposition essentially different, and obviously false For not only do governments undoubtedly differ in actual power, but the power of the strongest is constantly and successfully resisted or evaded and a limit thus set to State interference otherwise than ' by the simple process of exploding the State " All that can be claimed for Leviathan is that he is bigger and stronger than the individual and therefore in general able to overcome his resistance , but clearly omnipotence is not one of his attributes , nor will any amount of assertion make him stronger than he is

(2) The other form of the doctrine of *force majeure* proceeds upon pre

cisely the same argument but it is a striking testimony to the lack of definite significance in Prof Huxley s proposition (or rather I should say in the proposition attributed to him) that an essentially different conclusion is reached According to this doctrine—as stated by a late writer*—the sovereign is not the government but something outside of the government

The statement he says that municipal law is prescribed by the supreme power in the State is false and misleading unless by the supreme power in the State is meant the aggregate of all the social forces both material and spiritual which go to make up our civilization

The supreme power in the State or the sovereign is therefore this aggregate of all the social forces or as elsewhere expressed this resultant of social forces But this is obviously a merely figurative expression and renders further definition of the sovereign necessary This is effected by the more definite proposition that the supreme power in the State or the sovereign is that aggregation of individuals which has the actual ability to enforce obedience —it being added by way of explanation that all political power rests merely upon the possession by the few of the superior strength both moral and material

But this again is a very indefinite notion for the aggregation of individuals which has the actual power is not the majority of the whole or even the majority of the dominant party but the political managers of the latter and hence we must have a new sovereign not only with every election where the majority changes but with every change in the managers of the prevailing party

(8) The theory of Mr Tiedeman and that of Mr Donisthorpe though apparently similar and therefore liable to be confounded are in fact essentially different The latter regards the government as the sovereign and the sovereignty as vested in it The former asserts that the sovereign is something outside of the government which he describes as the aggregation of individuals which has the actual ability to enforce obedience or as elsewhere expressed those who possess the political power The former assumes that the power of the government is necessarily irresistible and that when it ceases to be so it is no longer a government the latter that the government has in fact no independent power but merely registers the decrees of the vague and shadowy sovereign existing outside of it Hence in Mr Tiedeman s view the law consists of the commands not of the government but of those who (for the time being) possess the political power and the commands of these few constitute the law whatever be their superior viciousness or iniquity Or as the doctrine is expressed by a writer in a late number of the *American Law Review* The law is simply a system of rules agreed to by *the dominant element* in the State or community and government merely a contrivance for the enunciation and enforcement of these rules

This theory though perhaps when taken literally more extravagant than any of the others has at least the merit of recognizing the great

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*Tiedeman *The Unwritten Constitution of the United States* truth that there is in fact a power outside of the government and paramount to it of which the government itself is mainly an instrumentality The defects of the theory are (1) that it regards merely the actual power of the government and does not consider the more important question of its rightful power or right and (2) that it fails to identify the nature of this paramount power by which the government is controlled

With regard to the extent of the actual power of the government all that can be said is that it varies infinitely in different times and countries and hence that no theory with reference to it is possible It may however be asserted that the power of the government is in no case unlimited —which is but to say that the omnipotence of human power is inconceivable And it may be further asserted that there is always a power outside of it that is in general and in the long run superior to it This consists it is sometimes said in public opinion but the expression is an unfortunate one including not only the settled concurring convictions of men with reference to fundamental questions but also transient popular opinion which is altogether unreliable and which in fact is often disregarded by the government We must regard the expression therefore as referring only to opinion that is permanent that relates to matters of right and wrong and in which all or nearly all concur which corresponds almost precisely to the Greek term *nomos* In this sense all governments are in the long run to a large extent and in civilized countries almost entirely governed by public opinion and in this we have the actual power to which doubtless Prof Tiedeman more or less consciously refers This concurrent opinion however consists in an agreement not of the wills but of the consciences of the people and it simply affirms not what is but what ought to be and is therefore nothing more nor less than the general conscience or positive morality of the community That it is always correct cannot be affirmed but that it is so in the main is beyond question and it is also certain—as will be shown hereafter—that it is the only admissible practical standard by which questions of general concern are to be immediately determined We have here therefore not merely an actual power by which governments are in fact largely controlled, but also the rightful power by which they ought to be controlled and in which in fact the rights of individuals and of governments find their source And thus again we arrive at the so called doctrine of sovereignty which asserts that the law or justice is the true sovereign And this we may conceive is the unconscious but real theory intended by those who assert the fiction of a general will vested in the government representing the particular wills of all the individuals in the community *

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* The matter in this and the following section has been collected from various sources some of which it has been impracticable to note In addition to the sources specified in the notes I have in this chapter and also in the Introduction drawn largely upon Mr Smith's *Elements of Right and of the Law* (Callaghan & Co Chicago) and a monograph of the same author entitled *A Critical History of Modern English Jurisprudence*

§ 8 *Of Austin's Argument, and of His Theory Generally*

The theory of Austin is so coherent and closely knit together that his doctrine of sovereignty can only be considered in connection with his general theory, which therefore must be first considered

(1) The theory of Austin is in fact wholly based upon the ambiguity of the term *law*, which is defined by him as though equivalent to the Latin *lex* but habitually used as though including the whole law, or *jus* Thus—taking for illustration the famous position of Austin, that judicial decisions are in fact commands or expressions of the will of the State and therefore in nowise different in essential nature from laws or statutes—it is obvious that the conclusion is deduced by an apparent syllogism of which the major premise is the proposition that all *law* is an expression of the will of the State or government and the minor that judicial decisions constitute part of the *law*, from which—assuming that the term *law* be used in the same sense in both propositions—the conclusion must necessarily follow But, in fact in the major premise, it is used in the sense of *lex*, and in the minor, in that of *jus*

The same fallacy is also illustrated by the equally famous position of the same writer, that custom does not constitute part of the law—the argument being as follows (1) As before All law (*lex*) is an expression of the will of the State (2) Custom is not an expression of the will of the State *Ergo* (3) Custom is not part of the law (*jus*)

The theory of Austin also furnishes us with a beautiful illustration of the fallacy of *petitio principii* For the theory is wholly deduced from the definition of the law as being merely an expression of the will of the sovereign or the Supreme Government and is therefore in effect assumed in the definition while the definition itself was taken as it were by accident, from Blackstone, without proof or attempted proof of its correctness, and as though self evident (*m*)

The theory also presents several striking and important illustrations of the fallacy of irrelevant conclusion or *ignoratio elenchi*—the most formidable form of which is to use an ambiguous conclusion proved true in one sense as though true in all senses Of this the most important and conspicuous examples are furnished by the reasoning of Austin upon the two important subjects of justice, or rights and of sovereignty—which will be considered in the order named

(2) In the vocabulary of the Austinians, a right is defined as being a mere *legal* power, or, in other words, a power over others, vested in any one by the expressed will of the government, and rights, therefore, in this sense of the term, are mere creatures of that will Accordingly, whatever power be conferred by the government upon any one—though it be in violation of every principle of justice and morality, and even of mercy or decency—it constitutes a right, and, on the other hand, no claim that one man may have upon another, however just, can constitute

a right unless the government has signified its will that it should be such But the term *a right* universally carries with it as part of its essential connotation, the notion of *rightness* and consequently *ex vi termini* it is impossible to conceive of a right that is not just or rightful and hence Austin was compelled to advance to the position that in truth law (i e the expressed will of the government) is itself the standard of justice ' * This view he based on the proposition that the term ' *just or unjust justice or injustice* is a term of relative and varying import —denoting merely conformity or non conformity to some standard of comparison referred to by the speaker This standard may be either (1) the will of God as evidenced by utility or (2) positive morality or (3) the will of the government and accordingly as the one or the other of these standards is referred to the term has an essentially different meaning Hence it may be said with equal propriety that Socrates was poisoned and Christ crucified either justly or unjustly or that it is either *just* or *unjust* for one to refuse to pay an honest debt, or to return a deposit where the action of the creditor or owner is barred by the Statute of Limitations Or we may in one sense of the term approve as just the fate of the gladiator butchered to make a Roman holiday or the spectacle of Christians converted by Nero by way of amusement into animated torches or of the crazy act of Caligula in making his horse a consul or the marriage of Elagabulus to his catamite

Of the three standards referred to Austin holds the first i e utility as an index to the Divine Will to be obviously insufficient the second—*positive morality*—as mere opinion and therefore of no authority and consequently the third—the will of the government—as practically the only one admissible Accordingly it is asserted not only by himself but by the modern English jurists generally that in jurisprudence or the law the last is the standard and the only standard referred to that the term *rights* is always used in this sense and all other senses of the term are disregarded To this were we considering the theory generally objection might be made on the score that it is an altogether novel sense of the term *right* and one inconsistent with its proper and generally accepted sense, and that in thus using it it is almost impossible either for the speaker or the hearers to escape from the original connotation of the term And even the suspicion might be suggested that the term is in fact used on this account with a view of covering the innate and essential deformity of the Austinian theory with the cloak of its venerable name But this, though in my opinion true is immaterial to our present subject which is simply to expose the logical fallacy and for this purpose it will be sufficient to show—as can be very readily done—that the term is not used consistently by the Austinian jurists in the sense in which it is defined

The principle asserted by Austin is that *justice*, in the sense he uses the term denotes merely conformity to the will of the government, and that consequently *rights* are mere *legal* or *statutory* powers and therefore mere creatures of the legislative will and from this it logically follows that *in this sense of the terms* there can be no such things as *natural* rights or *natural* justice or right To this—except as a matter of taste—provided the terms be understood in the sense defined—no objection need be urged but thus construed both propositions are without significance for the one simply asserts the identical proposition that natural rights or rights existing independently of legislation are not rights created by law in the sense of legislation and the other the natural *justice* or *right* which *ex vi termini* does not refer to the will of the government as the paramount standard is not necessarily *justice* or *right* as determined by that standard The conclusions reached therefore have no bearing upon the real question involved which is Whether there is or is not a standard of justice or morality paramount to the will of the government? or in other words Whether there are in fact such things as natural rights and natural right or justice? Nor is there anything anywhere contained in the Austinian theory that throws any light on this great and fundamental question Yet the conclusion thus reached by Austin—which when construed according to his definitions is a mere truism—is habitually understood and used by his followers—as it was by himself—as though establishing the negative of the great question of the existence or non existence of natural justice or rights or in other words of the existence or non existence of justice or rights independently of governmental institution And this is regarded as so triumphantly established as to put the question for the future beyond the pale of legitimate discussion and to relegate the doctrine of Natural Right or of Justice and the ineradicable faith of the human race generally in the existence of natural rights to the list of exploded delusions—such—to use the illustration of Sir Henry Maine—as the Ptolemaic theory of the universe or the Pythagorean doctrine of the music of the spheres —a position wholly unjustified and which I take to be the most remarkable and striking illustration of the fallacy of *ignoratio elenchi* presented in the history of Philosophy

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* *Jur* 223

(3) The argument of Austin in support of the doctrine of absolute sovereignty has served to convince two generations of English jurists and philosophers and is fondly regarded by the existing generation, as an impregnable foundation upon which that theory may securely rest On this account whatever be our views with regard to the doctrine the argument demands of us a most serious and careful examination For, on the one hand if it be valid it has in fact recreated political science, and thus, as the Austinian jurists claim rendered it necessary for us definitely to abandon not only the doctrine of limited sovereignty, but also many other almost universal delusions On the other, before accepting his paradoxical views it behooves us to assure ourselves that the argument used to establish them is at least logically conclusive, and that we be not misled by merely verbal fallacies

Briefly stated his argument is that it follows *ex vi termini* from the definition of the law as consisting exclusively of the commands of the sovereign that the power of the sovereign cannot be limited by law or in his own language, ' is incapable of legal limitation , or stated syllogistically

(1) Whatever is limited by law is limited by the commands of the sovereign (2) The power of the sovereign is not limited by his own commands (3) Ergo the power of the sovereign is not limited by law (*n*)

The three principal terms here used as we have observed are all extremely ambiguous but in the present argument as will be seen by reference to the passages cited in the note they are precisely defined The term *law* denotes merely the commands of the sovereign and the term *sovereign*, the supreme government—whether consisting of a monarch or of a sovereign number—and the term *power actual power* The proposition, therefore merely asserts that *the actual power or might of the government cannot be limited by its own commands* Or as the argument is expressed by Hobbes in the passage cited in the note To the civil laws or to the laws which the sovereign maketh the sovereign is not subject For, if he were subject to the civil laws he were subject to himself which were not subjection but freedom

In this sense of the terms no objection can be made either to the argument or the conclusion but the latter—which as defined is without material significance—is habitually used by Austin and his school as equivalent to several essentially different propositions and hence the argument thus used presents an example or rather several examples of the fallacy of *ignoratio elenchi* , to which it will be necessary to advert in detail

The most important of these is that the conclusion is habitually regarded and used by the Austinians as though a successful refutation of the theory to which they are opposed which is that the rightful power or right of the government is limited by law in the sense of *jus* , of which, as will be seen natural right or justice constitutes a part And hence they regard as exploded not only the proposition above stated but also the hypothesis of natural rights and of justice, or natural right But obviously the conclusion of Austin is not the *elenchus* or contradictory, either of the theory of limited sovereignty, or of that of natural right, but is entirely consistent with both

The conclusion of Austin, that the power of the sovereign is unsusceptible of legal limitation is expressly asserted by him to be equivalent to the proposition that ' every free government is legally despotic , ' which, he says, is ' the same proposition dressed in a different phrase " But this is not the case , for according to the most obvious sense of the terms, to say that the government is ' legally despotic " is to say that it is by law vested with despotic power which is obviously false, and, according to Austin's theory, impossible

The conclusion asserted is also regarded by Austin and his school as a refutation of the proposition that the power of the government may be limited by constitutional laws or statutes and consequently they assert that constitutional law whether established by custom or by written constitution is not in fact law Which at least to Americans seems to be inconsistent with facts familiar to them from their own experience For in this country the powers of all our governments State and Federal are in fact limited by written organic or constitutional laws and it cannot be doubted either that these are statutes or laws in the strictest sense or that our governments are supreme or sovereign governments Nor is this proposition inconsistent with the conclusions asserted by Austin For in his argument the term sovereign is expressly defined as equivalent to supreme government and consequently the law as consisting of the commands of the sovereign as thus defined or in other words of the commands of the government But in the popular or as it may be called American doctrine—which asserts the possibility of limiting the power of the government by written constitutional laws—the sovereign whose commands are referred to is the State as distinguished from the government and consequently the law (*lex*) is regarded as consisting not only of statutes enacted by the ordinary legislature but as including also statutes enacted by constitutional conventions Hence having regard to the double meaning of the terms used the two propositions though verbally are not really inconsistent or in other words the one is not the *elenchus* of the other For we may say without contradiction that the supreme government is at once sovereign and not sovereign—*i e* sovereign as being the supreme government or political organization in the State but not sovereign as being the State and that while its power cannot be limited by laws enacted by itself or in other words by its own commands it may be limited by constitutional laws or commands of the State imposed by a constitutional convention

Nor is the fact material—as claimed by Austin—that a constitutional convention is itself an extraordinary or ulterior legislature * for such a convention is not a government even when in session and is still less so after it is dissolved and its members mingled with the body of the people

Nor is it true that constitutional laws are without sanctions even as against the government For though no punishment is or can be provided for the fictitious or imaginary being who in corporate governments is conceived to be the sovereign—and who in fact as was observed by an eminent jurist has neither a soul to be saved nor a body to be kicked—yet provision may be and is made for the punishment of the individual officers that constitute the government or sovereign and by whom its powers are actually exercised and in this way our artificial man Leviathan may be and is effectually controlled

Finally Austin seems to regard his conclusion as equivalent to the proposition of Sydney that all governments must necessarily be vested with

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* *Jur* 254

'*arbitrary* powers. But this is not the case. For obviously the rights of the government must be more extensive than its functions, and within the limit of its rights its powers must necessarily be arbitrary. Thus it is the function of a judge to administer justice, but his jurisdiction or right is to determine the controversy presented to him, and though by mistake or even by deliberate intent he may decide wrongly, this will not affect his jurisdiction. So also, according to the Democratic doctrine, it is the function of the federal government under the constitution, in levying duties, to levy them for purposes of revenue only, and it is a violation of its functions to impose them for the purpose of protecting manufactures or for any other purpose; but in order to enable it to perform this function efficiently, its right must extend in general to the power of imposing duties even for illegitimate purposes.

The general acceptance by English jurists of Blackstone's definition of the law, and of the irrational theory founded upon it by Bentham and Austin, and the long continued domination established by the theory over the English mind, is one of the most curious and instructive phenomena presented in the history of mankind. Nor is it possible to estimate fully the deleterious consequences that have thus resulted. Briefly, it may be said that it has eradicated from English jurisprudence, so far as the views of theorists can effect such result, the very notions of justice and reason, and has thus effectually isolated the English jurists from those of other ages and countries. The theory and the numerous works of English jurists in support of it are therefore to be regarded not merely as valueless, but as even positively deleterious to the intellect and the conscience of the nation; and hence the first step towards the rehabilitation of true jurisprudence must be the total eradication not only of the theory itself, but of all the prejudices and false notions engendered by it. In no other way can we put ourselves in unison with the thought of the world on jurisprudence and political science. (*o*)

§ 9. *Bodin's Argument.*

To the above arguments may be added that of Bodin, who, in the opinion of Sir Frederick Pollock, is entitled to share with Hobbes the renown of having founded the modern theory of the State,* and with whom certainly the doctrine of sovereignty seems to have originated. In regular course, therefore, his argument should have been considered first; but as I am unacquainted with his work except at second hand, I was compelled to omit its consideration. His argument, as stated by Sir Frederick Pollock in the paragraph cited, is as follows:

"In every independent community governed by law there must be some authority, whether residing in one person or several, *whereby the laws themselves are established and from which they proceed. And this power being the source of law must itself be above the law*, not above duty and moral responsibility as Bodin carefully explains *but above the municipal ordinances of the particular States—the positive laws* in modern phrase—*which it creates and enforces* Find the person or persons whom the constitution of the State permanently vests with such authority under whatever name and you have found the sovereign Sovereignty is a power supreme over citizens and subjects itself not bound by the laws This power is somewhere necessary to an independent State and its presence is the test of national independence Such is in outline the principle of sovereignty as stated by Bodin taken up a century later by Hobbes and adopted by all modern publicists with more or less variation in the manner of statement But obviously this argument like that of Austin rests upon the ambiguity of the term law as signifying either *lex* or *jus*

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* *History of the Science of Politics*, 19.

Whether the argument of Bodin is correctly stated by the author cited I do not know but assume that it is But if so Bodin is extremely inconsistent for according to the author he tells us of organic laws or rules which may be so very closely associated with the very nature of this or that sovereignty that they cannot be abrogated by the sovereign power itself and he instances the rule of succession to the French Crown Again there are institutions of society such as the family and property which he assumes as the foundation of the State and with these even the sovereign power cannot meddle From the inviolability of property he draws the consequence that not the most absolute monarch can tax his subjects without their consent [*]

§ 10 *Historical Refutation of the Doctrine of Absolute Sovereignty*

The doctrine of sovereignty is generally expressed in the proposition that the sovereign power or sovereignty is unlimited and indivisible It is not explained by the advocates of the doctrine whether the proposition refers to the actual or the rightful power of the sovereign that is to say to his might or to his right But in whatever sense the term is used the doctrine—as we have seen—is not only without definite significance or in other words, *nonsense* and the arguments adduced in support of it—even those of the most celebrated philosophers—a mere tissue of logical absurdities but it is also inconsistent with the whole history of the European race whose principal characteristic and fundamental political virtue has been in sentiment an abhorrence of unlimited power and in practice a determined resistance to it and in the long course of whose history every epoch and place has been a living refutation of the doctrine

Here in our own country according to the unvarying decisions of the Supreme Court of the United States and of all jurists possessed of even an elementary knowledge of the constitutional law, the sovereign powers are in fact divided between the federal government and the States and in each State and in the federal government they are again divided among several departments Hence the power of each political community and of each department is limited by that of the others and not merely is this so in theory but the courts are empowered to pass upon the validity of every legislative or executive act either of the general government or the States and to declare them void if they transcend the limits of power imposed by the constitution

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[*] *History of the Science of Politics* p 21

So also we were taught in our younger days that under the English constitution the sovereign power was vested in the king the lords and the Commons and that the participation of each of these was necessary to the validity of all legislation and this was not only the doctrine of English lawyers and statesmen but also of foreign publicists who saw in it the peculiar excellence of the British constitution Hobbes indeed had asserted that the sovereign power was vested in the king only and that the doctrine that his single power could be resisted by Parliament was anarchical in its tendencies and therefore untenable (*p*) and in the same way the modern English jurists or some of them blindly assert that the sovereign power is vested in the Commons but in fact the whole history of England is but an illustration of the practical workings of the theory uniformly asserted by the lawyers that the legislative power is equally vested in the three coordinate departments and that neither has any power to act without the participation of the others The relative power of each has indeed at different periods varied extremely In early ages the power of the king was most formidable afterwards the lords and finally the Commons but even now it is simply an absurdity to say that any independent power is vested in the latter for even in the last year or two we have seen it actually overridden and nullified by the lords and so it must always be until a revolution is effected

But the most conspicuous illustration of the historical fallacy of the doctrine is presented by the constitution of the Roman Republic—the most famous and one of the two or three most efficient and successful constitutions that ever existed and a somewhat detailed examination of the provisions of this constitution will perhaps serve better than any other to illustrate the subject

Under the monarchical government the whole executive and judicial power was vested in the king who held for life and the legislative power, in the people The actual power of the king was in theory not to be resisted by any citizen and in practice it was as nearly irresistible as it was possible to be But he had no power of legislation and any act of his that went beyond the existing law was regarded simply as an exercise of unlawful power (*q*) On the other hand the people, in whom the legislative power was vested could not act of their own motion but only upon a law proposed by the king or in other words the initiative of legislation was vested in the king Nor was every legislative act of the people on the initiative of the king necessarily valid there was still another department in the State viz , the Senate in whom was vested the power of guarding the law itself and nullifying such legislation as was clearly opposed to fundamental principles or, as we would say unconstitutional

Originally the people consisted of the patricians only, who acted in an assembly called the *Comitia Curiata* and they alone bore the burdens of the government and constituted the military force But under what is called the Servian constitution said to have been established by Servius Tullius the population whether patrician or plebeian was divided into classes and centuries according to property qualification —the classification being similar to that of the Athenian people by Solon The intention of this arrangement was to make the plebeians or those who had property equally subject with the patricians, to taxation and military service but the assembly of the citizens under this classification called the *Comitia Centuriata* gradually acquired legislative power and took the place entirely of the *Comitia Curiata* In this assembly the classes were so arranged as to give a decisive advantage in voting to the higher classes

Afterwards under the republic a new division of the people was made into tribes and as the primary purpose of this was for the assessment and collection of taxes the assembly of the citizens by tribes was called the *Comitia Tributa* and in this the votes of all the citizens were of equal force This assembly also gradually acquired legislative power and it finally became a coordinate legislature with the *Comitia Centuriata* Each of these assemblies was vested with full legislative power and each could repeal the acts of the other or in fact either could in theory have abolished the other In the one assembly manhood suffrage prevailed in the other a property qualification that gave the decisive power to the wealthy and these two coordinate legislative assemblies continued to exist alongside of each other during the whole period of the republic (*r*)

Upon the abolition of the monarchy instead of one king for life the kingly power was vested in two officers holding for a term of one year only called consuls in whom was vested all the powers of the king not jointly but in each separately so that either consul could act without the concurrence of the other and either could annul the acts of the other and indeed either could remove both himself and his colleague from power by nominating a dictator in whom the whole kingly power became at once vested These officers that is the consuls or the dictator had the power of punishing the citizen , and this power extended even to the infliction of the death penalty until by the Valerian law an appeal was provided in the case of capital offenses to the people In addition it was enacted that every citizen should have the right to kill any official including the consuls, should he aspire to a tyranny, and that upon trial proof of the fact should be sufficient to acquit him

Originally, the political power, as we have said, was confined to the patricians, and afterwards to the patricians and the wealthy plebeians and in consequence the plebeians were much oppressed This resulted in the first secession and in the compromise by which this was settled the office of the tribunate of the people was established This consisted at first of two tribunes of the people elected by the plebeians whose persons were made sacred from arrest or outrage of any kind and in whom was vested the power to veto any act of the consuls or other officers or any legislation proposed so that the power was in fact as well as in theory vested in them of stopping the wheels of government entirely The number of the tribunes was afterwards increased but this institution also continued throughout the whole history of the republic

Comment upon these constitutional arrangements is unnecessary We have here the sovereign powers of the government distributed not merely among different officials and departments acting concurrently but independently in various officers and assemblies opposed and generally hostile to each other And yet this constitution—than which according to modern theories nothing could be more absurd was in fact the most successful in its operation that history has presented us with and to it we owe the achievements of the Romans during the most successful part of their history and ultimately the conditions of modern civilization

§11 *Historical Genesis of the Doctrine of Absolute Sovereignty*

The genesis of this theory is readily accounted for by the historical events out of which it grew In the struggle between the kingly power and that of the feudal lords in the Middle Ages the former naturally came to be regarded as the last refuge of personal security and the only hope of organized social life and out of this arose an almost universal sentiment in its favor which found its expression in the modern doctrine of sovereignty and this doctrine either in its original form as applied to a single monarch or in a secondary sense as applied to other forms of government has come to be so generally received in the political philosophy of Europe that the term itself in popular use carries with it the connotation of being an absolute despotic power or right And this notion intensified by the events of the great English Civil War and of the French Revolution continues to prevail in Europe and especially in England and also to a considerable extent in this country

Hence obviously the doctrine is simply the exaggerated expression of a sentiment just and natural in itself in the form of an absolute proposition, and in this form it is obviously untrue It is indeed sufficiently manifest that the power of government must be great, and we may even say with Hobbes *Non est super terram potestas quæ comparetur ei* But that it is or should be, either unlimited or irresponsible or that it should be any greater within the limits of our power to restrict it than necessary for the efficient performance of its functions does not follow, nor is it possible to conceive of any argument tending to establish such a conclusion

Nor is it probable that any one can be found who really believes in the doctrine It would not be difficult to find in Hobbes' writings opinions inconsistent with it, and even by Bentham and Austin the doctrine is asserted with the anarchical qualification that the government may be resisted, or even overturned, when demanded by the vague principle of general utility So in history, never has the doctrine been practically asserted by any but the predominant party in the government nor has it ever had the slightest influence with the party in opposition Nor are we without instances of revolutions effected by men who on previous occasions had most absolutely asserted the doctrine Thus among many other instances that might be cited the cavalier and church party, who, in the great rebellion, supported Charles and asserted in the most unqualified terms the principle of the divine right of kings was not restrained by its doctrine from joining with the revolutionary party to dethrone James Nor can any one in this country be found who hesitates to justify our own Revolution or any other of the great revolutions of history by which tyranny has been overthrown, and constitutional liberty established

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NOTES

(a) ' The ancient Greeks applied the name *πολιτική* to all political science We (Germans) distinguish Public Law (*Staatsrecht*) and Politics (*Politik*) as two special sciences

Public Law and Politics both consider the State on the whole but each from a different point of view and in a different direction In order to understand the State more thoroughly we distinguish its two main aspects—its existence and its life

Public Law (*Staatsrecht*) *deals with the State as it is* i e its normal arrangements the permanent conditions of its existence

Politics (*Politik*) on the other hand *has to do with the life and conduct of the State* —*The Theory of the State* Bluntschli translation p 2 (The italics are the translator s)

The general science of Right is divided into three principal branches each one of which forms a distinct science First *the philosophy of right*—an integral part of philosophy in general—expounds the fundamental principles of right which result from the nature of man as a reasonable being and determines the manner in which the relations between men ought to be established in order to conform to the idea of justice It creates thus not a chimerical but an ideal State towards which social life ought more and more to approximate On the other hand *the history of right*—an integral part of history in general—makes us know the changes that the laws and the institutions of a people have undergone at different epochs of their civilisation Their present state so far as it is comprised in the principles of right actually in force is determined by positive right private and public while civil and political statistics which are a part of general statistics make us know the totality of facts which characterise the state of private and political law Positive right is comprised in the history of right, because it changes continually with the culture of the people Finally the science intermediary between the science and the history of right and bearing upon both is *political science* (or Policy *la science politique*) It demands on one hand from the philosophy of right, the knowledge of the end of society and of the general principles of its civil organisation and consults on the other in history and positive right and in statistics the antecedents of a people, the character and the manners which it has manifested in its institutions, the actual state of its culture and its exterior relations with other nations It is from this data that political science expounds the reforms for which the State is prepared by its previous development, and which it can actually realize. Policy (*la politique*) is, then, the science which, upon a historic basis, and in the measure of existing forces, expounds the totality of the conditions and of the means proper to assure continued progress, and to realize the reforms immediately demanded of the social state "—Ahren's *Cours de Droit Naturel*, § 2

(*b*) There can be no doubt that the present age is as distinctly unlogical, as the age prior to that of Bacon was unscientific, and that in political and social science, and in the science of human nature generally—in the investigation of which logic must always be an indispensable instrument—the great demand of the times is the revival of the use of logic, and our motto here, as elsewhere, should be, "Back to Aristotle"

"We . live in an age," says De Morgan, "in which formal logic has long been nearly banished from education , entirely we may say from the education of the habits The students of all our universities (Cambridge excepted) may have heard lectures and learned the forms of syllogism to this day , but the practice has been small , and out of the universities (and too often in them) the very name of logic is a by-word

"The philosophers, who made the discovery (or what has been allowed to pass for one), that Bacon invented a new species of logic which is to supersede that of Aristotle, and their followers have succeeded by false history and falser theory in driving out from our system all study of the connection between thought and language The growth of inaccurate expression which this has produced gives us swarms of legislators, preachers and teachers of all kinds who can only deal with their own meaning as bad spellers deal with a hard word—put together letters which give a certain resemblance, more or less, as the case may be Hence, what have been aptly called the slipshod judgments and crippled arguments which every-day talkers are content to use Offenses against the laws of syllogism (which are all laws of common sense) are as common as any species of fallacy , not that they are always offenses in the speaker's or writer's mind, but that they frequently originate in his attempt to speak his mind And the excuse is that he meant differently from what he said , which is received because no one can throw the first stone at him ; but which, in the Middle Ages, would have been regarded as a plea of guilty " —*Formal Logic*, pp 240, 241

"The above," continues the author, after treating of the several fallacies, " were the forms of fallacy laid down as most essential to be studied by those who were in the habit of appealing to principles supposed to be universally admitted, and of throwing all deduction into syllogistic form. Modern discussions, more favorable, in several points, to the discovery of truth, are conducted without any conventional authority which can compel precision of statement and the neglect of formal logic occasions the frequent occurrence of these offenses against mere rules which the old enumeration of fallacies seems to have considered as sufficiently guarded against by the rules themselves, and sufficiently described under one head, the *fallacia consequentis*. For example, it would have been a childish mistake, under the old system, to have asserted the universal proposition, meaning the particular one, because the thing is true in most cases. The rule was imperative . '*not all*' must be '*some*,' and even '*all*,' when not known to be '*all*,' was '*some*' But in our day nothing is more common than to hear and read assertions made in all the form, and intended to have all the power, of universals, of which nothing can be said except that most of the cases are true. If a contradiction be asserted and proved in an instance, the answer is 'Oh ! that is an *extreme case*.' But the assertion had been made of *all* cases. It turns out that it was meant only for ordinary cases. Why it was not so stated must be referred to one of three causes—a mind which wants the habit of precision which formal logic has a tendency to foster, a desire to give more strength to a conclusion than honestly belongs to it, or a fallacy intended to have its chance of reception.

"The application of the *extreme case* is very often the only test by which an ambiguous assumption can be dealt with · no wonder that the assumer should dread and protest against a process which is as powerful as the sign of the cross was once believed to be against evil spirits. Where anything is asserted which is true with exception, there is often great difficulty in forcing the assertor to attempt to lay down a canon by which to distinguish the rule from the exception. Everything depends upon it , for the question will always be whether the example belongs to the rule or to the exception When one case is brought forward which is certainly an exception the assertor will in nine cases out of ten refuse to see why it is brought forward He will treat it as a fallacious argument against the rule instead of admitting that it is a good reason why he should define the method of distinguishing the exceptions he will virtually and perhaps absolutely demand that all which is certainly exception shall be kept back simply that he may be able to assume that there is no occasion to acknowledge the difficulty of the uncertain cases —*Ib* p 270 [illegible]

(c) After mathematics physical science is the least amenable to the illusions of feeling

The processes of scientific induction involve only the first elements of reasoning and present such a clear and tangible surface as to allow no lurking place for prejudice while questions of politics and morals to which the deductive method or common logic as Bacon calls it is peculiarly applicable are ever liable to be swayed or perverted by the prejudices he enumerates (*Novum Organum* Aph xl Editor's note) The last reference is to Bacon's celebrated doctrine of Idols (εἴδωλα illusions or false appearances)—*Organum* Aph xxxviii *et seq*—one of the most profound and valuable parts of his works and which we cite as authority for our own strictures

It may be added that the logical processes involved in the Mathematical and the Experimental Sciences are so extremely simple as to render their non observance almost impossible while in Politics Morality and the science of human nature generally they are so difficult as hardly to be overcome by the greatest genius

Of this the most striking example is presented by the celebrated Hobbes—the most powerfully logical genius and the most profound political philosopher since Aristotle But his preeminent mental gifts were to a large extent neutralised by the almost insane dread of the miseries of civil war generated by his own experience or inherited from his mother of whom it is related that she was prematurely delivered of the philosopher by reason of the fright into which she was thrown by the report of the approach of the Spanish Armada From this and the associations of his life he was naturally led to espouse the royal cause in the great rebellion and thus it resulted that his work composed at an advanced age after his political opinions were formed is but a magnificent polemic in support of a preconceived conclusion originating in the idiosyncrasies of his nature and his peculiar experiences Yet in the opinion of Leibnitz he was one of the only two (the other was Grotius) who were capable of reducing morals and jurisprudence to a science So great an enterprise he says might have been executed by the deep searching genius of Hobbes if he had not set out from evil principles (McIntosh's *Dissertations*)

As it is his works on account of the unrivaled style the logical power and the profound and penetrating genius displayed in them constitute by far the most valuable contribution to political science in modern times and in the critical examination to which I propose to subject them it is my hope that I may not only point out the dangerous fallacies contained in his reasoning rendered trebly formidable by his logical skill and polemical ability and by a style that is nearly the perfection of expression but that I may also call back the attention of my readers to writings preeminently deserving of consideration not only from their intrinsic merits, but from the fact that in them is to be found the source and spring of modern political philosophy

Another instance no less striking is presented by Austin—a writer hardly inferior to Hobbes in logical capacity and far more fair minded and disposed to observe the requirements of logic and one whose works in the department of jurisprudence are hardly of less value than those of Hobbes As far as can be judged there was no particular disposition on his part towards arbitrary government but the particular bias (or as Bacon would call it idol) to which he was subjected was the notion derived from Bentham and Blackstone that the law (*jus*) is mere expression of the will of the sovereign or supreme government This he accepted with unquestioning faith as his first principle and from it with an intrepidity of logic that is much to be admired he deduced his whole theory

(*d*) The doctrine of absolute sovereignty is at once an attempted solution of the problem of the rights or rightful powers of the State—which will be discussed fully in the body of this work—and, also, to a certain extent, a theory as to the nature of the State Regarding it as wholly false, and as even absurd, I deem it a matter of importance, in order to avoid embarrassment in our investigations, to dispose of it before entering upon our main subject Otherwise, as will be seen, we would find it necessary, at every step of our progress to interrupt our investigations in order to refer to and refute this almost universal prejudice

Another motive, scarcely less powerful, for introducing the subject here is to vindicate the strictures contained in the text as to the almost universal non observance of logic by modern political theorists, and the resulting fallacious and inconsequent methods of reasoning characterising their writings In executing this task, I shall freely avail myself of the technical names of the several fallacies used by logicians, for though this may give something of the appearance of pedantry to my discourse, there is no other method by which the task can be so briefly and effectively accomplished

(c) The terms "sovereign" and "sovereignty" have widely departed from their original meaning The former term is equivalent to the low Latin *superanus* (formed with suffix *anus* from Latin *super*), and etymologically it denotes merely superiority, and hence, in a political sense as originally used, it denotes merely the monarch or other supreme officer of a State, and its correlative, *sovereignty*, the power vested in the sovereign Both terms are strictly comparative, and there is nothing in them to imply that the sovereign or supreme power in the State is absolute or unlimited, all that is implied is that the sovereign is superior to the other officers of the State, and his power superior to theirs. Hence, as originally used, the terms were applied with equal propriety not only to the king or monarch, but to his feudatories, who each were said to be sovereign in their own domain Afterwards the term came to be restricted to the monarch only, from whom it was transferred to the government generally, and afterwards, as will be explained, to the State as distinguished from the government and various other abstractions The term is, therefore, now one of the most vague in the language, and, as observed by a late American writer, it "is seldom used by two respective writers as embodying the same notion, and is oftener used to supply the absence of a distinct notion"—that is to say, it is used by different writers with all sorts of different meanings, and still more frequently without any distinct meaning at all He is, therefore, of the opinion, in which I entirely agree, that "because of its uncertainty of its special unfitness as applied to a federal State, and of its suggestion of absolutism the word should be dropped," or, at least, ostracised for a while. "As used by some," he adds, "it is not deceptive or dangerous, but it will not be so used, and in the future as in the past will breed disorder and anarchy" (Bliss on *Sovereignty*, pp 172, 175)

In order to guard against the numerous unfortunate associations of the term, we subjoin the just and sober observations of Mr Ahrens upon the subject

"The *sovereignty* . has been confounded with omnipotence and absolutism, and centralised, instead of being conceived organically and as dividing itself among the several domains of the social order Nevertheless this conception is in accord with the true sense of the word. Many theories, it is true, have been built upon the nature of sovereignty (a vague word originating in the Latin of the Middle Ages from *superioritas superanus*), which lends itself readily to arbitrary conceptions, but, according to its true sense, the term denotes merely a power which, in its own domain, decides finally without being submitted in this respect to a superior authority. In this sense we rightly speak of a court of justice which decides finally as sovereign, but as the social order is an organic whole of several spheres of life, of which each ought, in virtue of its autonomy, to decide, in last resort, upon a certain class of relations left to its determination, each sphere of life is sovereign in its degree and in its kind This acceptation of the notion of sovereignty was not unfamiliar to the epoch of the Middle Ages . . In effect, in the feudal hierarchy, the sovereignty was always attributed to the last member 'Each baron,' says Beaumanoir, 'is sovereign in his barony' . What is said here of the baron applies to-day to every free personality . . . Every man is sovereign in the sphere of action where it belongs to him to act finally without being responsible to a superior authority. It is the same with the family and with the commune .

"As to the mode of exercise of the sovereignty, it is to be received as a fundamental principle that like all power it ought to be a sovereignty of right (*Cours de Droit Naturel* § 110)

(*f*) Or rather we should say that the real sovereign consists of the managers who control the assembly For nowhere is the saying truer that there is a power behind the throne greater than the throne than in the case of large assemblies which experience has demonstrated are incapable of rational and consistent action and are always controlled either by committees or by party managers This notion as will be seen is in fact embodied in one of the numerous doctrines of sovereignty of which the present day is extremely prolific (*infra* p 240)

(*g*) A striking illustration of the danger of using the term sovereignty even thus qualified is presented by Mr Von Holst in his *Constitutional History of the United States* or rather the first volume of it The conclusion there reached (I say *conclusion* because the history seems to have been written for the purpose of establishing the proposition) is that Sovereignty is One and Indivisible—the Sovereignty of Law

This is apparently an innocent though certainly not a self consistent proposition For if the law be sovereign it must follow that there are as many different sovereigns as there are laws and hence that in every State of the United States there must be two sovereigns for in each there are two different and entirely independent systems of law But in fact, the doctrine of the sovereignty of the law though formally asserted by him is not the doctrine he has in his mind His real doctrine—to the establishment of which all his facts and arguments are marshaled—is that sovereignty is indivisible and therefore vested exclusively in the Federal Government and not to any extent in the States In other words the obvious and I may say avowed purpose of his work is to teach us—who for over a hundred years under the uniform decisions of the courts and the concurring opinion of constitutional lawyers of all political faiths—have believed ourselves to be living under a divided sovereignty—that we have been living under an impossible delusion thus presenting an instructive example of how difficult it is for a man to escape the influence of his early environment and the consequent almost impossibility for a European to comprehend the simple and rational doctrine of political power unreservedly accepted by the founders of our Constitution uniformly affirmed by our courts and our statesmen and rendered familiar to us by long use which is that the sovereign or supreme powers of government may be and in fact are distributed between the General Government and the State governments and in each among the several departments of the Government (On this point see further *infra* pp 229 *et seq*)

In view of the danger of the common notion of sovereignty and the necessity of submitting it to a superior principle several eminent publicists (Royer Collard Guizot and others) have sought to transfer the sovereignty itself into an ideal sphere and to place it in reason truth or justice But sovereignty expresses a mode of action of the will and hence pertains always to living persons individual or collective but it is of high importance to comprehend that it ought to be exercised like all will according to the principles of reason and of justice —Ahrens *Cours de Droit Naturel* § 110 De la Souveraineté

The same observation is made by Mr Bliss The conception of Guizot which enthrones justice reason as the only sovereign commands our reverence yet in fact it is but a denial that sovereignty can exist among men It destroys the word by giving it to an obligation It is not a figment of the imagination like the social contract It is a metaphor—a sublime one but of little use in our present inquiries How sublime he adds is Guizot s metaphor and how welcome the word as he uses it Justice reason law as embodying its dictates is alone sovereign let the notion of any other sovereign be trampled under foot (Bliss on *Sovereignty* pp 172–175)

Thus amended the doctrine is but a reëxpression of the opinion of Aristotle (*Politics* b 3 c 16) Moreover he who bids the law be supreme makes God supreme but he who intrusts man with supreme power gives it to a wild beast, for such his appetites often make him

(*h*) It is well explained by Hobbes that in matters of experience where we fail to judge correctly it is simply an error or erroneous opinion But when we make a mistake

In reasoning [illegible] results commonly [illegible] deductive reasoning the result is not merely an erroneous opinion but an absurdity or nonsense. As the passage is one of extreme interest and containing a truth of great importance I quote it at length

When a man [illegible] without the use of words, which may be done in particular things as when [illegible] the sight of any one thing we conjecture what was likely to have passed or is likely to follow upon it, if that which he thought likely to follow [illegible] was not, or that which he thought likely to have passed hath not passed, it is called error, to which even the most prudent men are subject. But when we reason in words of general signification and fall upon a general inference which is false, though it ought to be commonly called error, it is indeed an absurdity or senseless speech. For error is but a deception in presuming that somewhat is passed or to come, of which though it were not passed or not to come, yet there was no impossibility discoverable. But when we make a general assertion, unless it be a true one, the possibility of it is inconceivable. And words whereby we conceive nothing but the sound are those we call absurd, insignificant and nonsense. [illegible] I [illegible] to talk illogically is to talk nonsense [illegible] always so [illegible] Hobbes was unconscious that [illegible] we talk nonsense all [illegible] without knowing it [illegible] were [illegible] more than two thousand years ago and the great need of [illegible]

(i) Bentham was never tired of reproaching the lawyers with their use of legal fictions or of [illegible] the [illegible] argument [illegible] repeated *ad nauseam* by his followers [illegible] Sir Henry Maine [illegible] based [illegible]. But it may be said that the legal fictions of the lawyers [illegible] always [illegible] and never [illegible] argument [illegible] merely as a convenient form of expression or as a convenient means of [illegible] legal rules [illegible] no arbitrary rule that [illegible] not be disavowed [illegible] its [illegible] governed by the maxim *In fictione juris semper aequitas existit*; while the fictions of philosophers, such for instance as the social contract, though known by them to be false, are stated and argued from as though in fact true and without any regard to the extravagance of the conclusions they may lead to.

(j) On this point Hobbes and the modern English jurists—who are at one with him—occupy precisely the position of the ancient cosmologists who explained the stability of the world by supposing it to rest ultimately on a turtle but did not explain upon what the turtle rested. In the same way these jurists regard private rights as resting upon the will of the State, but by denying the existence of natural rights they render it impossible to conceive of any foundation upon which the right of the State can be rested.

(k) It will be observed here that while the argument of Kant rests nominally upon the fiction of the personality of the State and of its supposed will representing the united will of the people, it involves also other fallacies incidentally referred to to eke out the reasoning.

The first consists of the ambiguous proposition that it is only by submission to the legislative will that a condition of law and order is possible, which may mean either a general submission or an absolute submission without exception. The former proposition is altogether true, and it is difficult to exaggerate the importance of the duty of the citizen to obey the government; but the latter is not only false but is inconsistent with the very existence of social order, the true foundation of which is the consciousness of inviolable rights in the subject and the manly determination in the last resort to vindicate them by force even against the government. The ideal State is not composed of slaves to human power, but in the noble language of Sir William Jones, of men who their duties know but know their rights and knowing dare maintain them.

The other fallacy consists in the argument that the power of the State would not be supreme if it might be resisted, and consequently to limit its supreme power is a contradiction. But obviously the term supreme power is merely comparative and denotes nothing more than the highest political power in the State, which if we use the term power in the sense of right is necessarily limited by right, and if we use it in the sense of actual power may be and in fact is limited in various ways.

(*l*) "*Ab extra*," continues the author, "this is so. I have always endeavored to show that the *effective majority* has a right (a legal right) to do just what it pleases How can the weak set a limit to the power of the strong?

"The time comes in the life of every government when it becomes effete, when it rules the stronger by sheer force of prestige, when the bubble waits to be pricked, and when the first determined act of resistance brings the whole card-castle down with a crash The *bouleversement* is usually called a revolution On the contrary, it is merely the outward and visible expression of a death which may have taken place years before In such cases a limit can be set to State interference by the simple process of exploding the State But when a State is (as Hobbes assumes) the embodiment of the will of the effective majority—*force majeure*—of the country, then clearly no limit can be set to State interference—*ab extra* And this is why Hobbes (who always built on fact) described the power of the State as absolute This is why he says that each citizen has conveyed all his strength and power to the State I fail to see any *a priori* assumption here It is the plain truth of his time and of our own We must never forget that rights, when created, are created by the will of the strong for its own good pleasure, and not carved out of the absolute domain of despotism by a higher court of eternal justice It is the absence of all this *a priori* vaporings common to Locke, Rousseau and Henry George, which renders the writings of Hobbes so fascinating and so instructive"

(*m*) The opprobrium justly resting upon English and American lawyers, for their simplicity in accepting this definition, is much heightened by the curious fact that the definition itself was the result of a blunder on the part of Blackstone, which, in any country, where the slightest knowledge of the Roman law survived among the lawyers, could not have escaped immediate detection It is a telling commentary on our proficiency in that law, that the mistake remained undiscovered, and the definition universally accepted for over a century

The definition obviously originated in the failure of Blackstone to comprehend the term *jus civile* as used in the Roman law According to the conception of the Roman lawyers, the law is made up of two elements, viz, the *jus gentium* and the *jus civile* the former consisting of those rational principles which are common to, and constitute the substantive part of all systems of law, and the latter, of the arbitrary or accidental rules peculiar to any given system According to this conception, the *jus civile* constituted not the whole, but only a part of the law, and, if we have regard to importance, rather than bulk, a very inconsiderable part of it But Blackstone unfortunately mistook it for the whole, and avowedly founded his definition upon it.

(*n*) I append at length the argument of Austin as variously stated by himself

"It results from positions which I shall try to establish that the power of a sovereign is incapable of legal limitation" (*Jur*, 264)

"Every positive law, or every law simply and strictly so called, is set directly or circuitously by a sovereign person or body to a member, or members, of the independent political society wherein that person or body is sovereign or supreme" (*Id*, 270)

"Now, it follows from the essential difference of a positive law, and from the nature of sovereignty and independent political society, that the power of a monarch, properly so called, or the power of a sovereign number in its collegiate and sovereign capacity, is incapable of legal limitation A monarch or sovereign number, bound by a legal duty, were subject to a higher or superior sovereign; that is to say, a monarch or sovereign number, bound by a legal duty, were sovereign and not sovereign Supreme power limited by positive law is a flat contradiction in terms" (*Id.*)

"The proposition that sovereign power is incapable of legal limitation, will hold universally or without exception"

Hence, "against a monarch, properly so called, or against a sovereign number in its collegiate and sovereign capacity, constitutional law and the law of nations are nearly in the same predicament, each is positive morality rather than positive law" (*Id.*, 277)

"But if sovereign or supreme power be incapable of legal limitation, or, if every supreme government be legally absolute, wherein (it may be asked) doth political liberty exist, and how do the supreme governments, which are commonly deemed free, differ from the supreme governments, which are commonly deemed despotic?

I answer that political or civil liberty is the l y fro l gal obligati n whi h is left or gran l by a s ver gn go er n e t any of its wn s bj ts and that s h pow r of go ern en is i cap bl f egal mi atio th g r m n is l g y fr t abridge t e r p lt al lber y at its ow pl asure s i l s r l n   *II* p 28

Ev ry s p   o g ern e   s free fr n egal res ral ts   r whil t s l sa p posi t o tr ated i a different pl ras   ery s pren o g er   is l gally *jo*   the its n l   leref e f g ver n nts l t *f*   a d *d spo*   a l a lly ea ha s   of l are fr r fro res a ts ha   rs or that the s bjects of   g   a wh l r   o l *j* are prote te l agai st tl r go er m n s y p sl lve law *I* 28

I a   p wer f a s ve ign s in p   f gal nl ati n has x l   i a d l d bu   d ffi y ke tl u s is of her pr s ly ar s f n   rl a am g y l   n s l d al   x f a s – l   ed n are y is y e l improp er v   *h o w   q* Now tl p wer t a   ar h o o   gn   s i nj p r y s s d s o   a ja   f g l ll a s l t s s n n s ac a y   l by p si l la v   hs s ore gn s t s proper v s s y ed w s conf l l w h ar l an l r vern gu l the pr per a cep a l n of th r us Since h pow r l e f rm a pa lega t o s l ls l gh l a tl pow r f the latter n gl be s i y s a r s r s Whatever may be h s r g the rr r is re ark ble l or he ga l l j l   f nar hs in he p p a p a lon of he r u a l f s r l l es l l l p s e a l s   gn aja l s n t y f ws u v al y f o   a r f s s p w r   s so a s r e l x p ess y l y c wn l po writers of ppo pa s l y ra d a l o ati s f he g vern n ts whi h ar d ked w   p l *J*   l by t e l l trated a lvoo tes t e g vernm ts wh l are tran le l wi h th pith *d*

If t so j l says Sydn y hat l a a l f d r f arbitrary p w rs l nf l a   j r l l w a y s t y be es abl sl l r s l sist w h t t n T e l ff r e b w g d d l g r n en s is   ha t se f ne sort l a ar l a pow r wl th o ern l a   or tl y all ha e lt t rath r ln t o wi l h are w l o t d his p w l s pla l as t av l be efi la t th pe ple

And he o l de ly p o l g the p l n f H s at o w o ha h e s re g pow r is s j tl l l laws l or if he were s j t o the l laws h w s jus l l ns f wh h w r n t s bj o b t fr l o   *II* 28 287

o (*f* a years many f t works of rman j r sts ha e se tran a d t E glish a l fro th s a d l e l appy ce sa n f w ks l y Engl ish A s l ls jur s of wh h E g l h press was previo sly pr lifi t m y be inferr d that the reign f A s   r l g n l l is on l g to a end In leed it is sa d by Sir Frederi k l   k l   *La Q a y Re v* with what truth I ca n t pres m t j lg tl a A s l s h y l ow regard d by advanced j rists in that cou ry as d a l and bur ed   a l l a la   ber f the *Re ew* we fi d an arti le by tl e sa e author in whi h a u r r tl a v w f tl at re of law a l of natural right is very ably expo de l B t as th who l e at r od rn English jurispr i nce including the wri ings of Sir Frederi k P ll k h lf has hitl ert been dev el to the establishme t of the A stinian heresy he sh l l a c x plained t his r aders th fact that English j rists hav been wander ng for r f r y yea in the wilderness of Aus in s spec lati s and th t what tl ey have l itl rt ta g t has be falso a d nial a ling l or u til the prej dices e ge dered by Austi s tl eory are r moved and the seq elae of the disease radicated there ca be n room f r a ore ratio a investigati   of the subject and n any readers will l ave great difficulty in r c c l ng tl eir former with their prese t teachi gs

j   Th ese are the rights whi h ake the elements f so ereignty and which are he marks whereby a man n ay dis rn in what man or assembly f m n the s vereign pow r is placed an l rests For these are incomm nicable a d inseparable The power t   ney o lis pose of the estates a d persons of nfant l eirs etc   ay be transferred by th sover eig an l yet the power to pr te t his s bjects be retai ed B t if he tr nsfer the militia he retains the judicature in vain for want of exec tion of the laws or if he grant away the power of raising m n y the militia is in vain or if he give away th gov rnment of doctrines men will be frightened into rebellion with the fear of spirits An l so if he con sider any one of said rights, we shall presently see that the holding of all the rest will produce no effect in the conservation of peace and justice, the end for which all commonwealths are instituted. And this division is it whereof it is said, a house divided in itself cannot stand; for unless this division precede, division into opposite armies can never happen. If there had not first been an opinion received by the greatest part of England that these powers were divided between the King and the Lords and the House of Commons, the people had never been divided and fallen into this civil war; first between those that disagreed in politics, and after between the dissenters about the liberty of religion; which have so instructed men in this point of sovereign right that there be few now in England that do not see that these rights are inseparable. It will be so generally acknowledged at the next return of peace, and so continue till their miseries are forgotten, and no longer—except the vulgar be better taught than they have hitherto been. (Lev. p. 88.)

His doctrine is that the sovereign power can never be divided. [illegible] is plainly and directly against the essence of a commonwealth; for what is it to divide the power of a commonwealth but to dissolve it, for powers divided mutually destroy each other. (Ib. 14[illegible].)

In connection with his proposition is to be found a strange contradiction in Hobbes' doctrine. For—as has been shown—the sovereign powers are necessarily divided in every form of government except that of absolute monarchy; yet he admits that there may be three kinds of commonwealths, namely, Monarchy, where the representative (or sovereign) is one man; Democracy, where the sovereign is an assembly of all that will come together; and Aristocracy, where the sovereign is an assembly of part only. (Ib. 85.) This conclusion was, however, forced upon him only by the necessity of admitting the historical existence of these three forms of government. But in his opinion the first was [illegible] the preferable and proper, as the only legitimate form. (Ib. pp. 92 et seq.)

(j) One of the most deleterious effects of the Austinian theory upon the minds of the modern English jurist is that it has apparently rendered him incapable of [illegible] a power limited by right. For with him right is also incapable of being [illegible] a right without a remedy is a vain thing, [illegible] understands that such a right cannot exist; and [illegible] that the power (or the right) of the Roman king was limited by law, while in fact his actual power was practically irresistible, is incomprehensible. But the passage cited had a nobler meaning [illegible] of Chief Justice Holt, by whom it was first uttered; the inference drawn from it by him was that where the remedy was wanting it ought to be furnished—as expressed in the maxim of the law, *ubi jus ibi remedium*. And in fact such is the constitution of human nature that where a right is firmly fixed in the conscience of a people it will sooner or later find its remedy. And, even though the remedy be long coming, it will only render the case more hopeless to infer therefrom that the right does not exist. Thus at Rome during the monarchy no legal remedy could be found for the violation of the law by the king, nor could he be made in any way responsible; for he was king for life, and when he ceased to be king could no longer be held by human power. But when for the king holding for life there were substituted consuls, chosen annually, in whom was vested the kingly power unaltered, the principle at once came to have a practical application; for while the consul's power was irresistible, and his person sacred during his term, he became liable upon its expiration, and like any other person might be called to account for his violation of the law—as was frequently exemplified in actual practice.

An analogous case is presented by the early Norman kings of England, whose power—as elsewhere under the feudal system—could in practice be restrained only by force. It was, however, a principle of the law then recognized that the power or right of the king was limited by the law, or as expressed in Bracton's maxim: *Ipse autem rex non debet esse sub homine sed sub Deo et lege, quia lex facit regem.* (Spence, Eq. Jur. 128.)

Among the limits thus imposed by the law upon the king's power was the principle of immunity of life, person, and property in the citizen. This right was habitually violated, and with impunity, by the king; but the principle nevertheless continued to be recognized and asserted; and after a long struggle, commencing with *Magna Charta* in the reign of John, and ending with the *habeas corpus* Act in the reign of Charles II, it was finally vindicated in practice, and the power of the king effectually limited.

(r) The nature of this political arrangement is graphically described by Hume, *Essays*, Part II, Essay 10, from which we extract the following:

A wheel within a wheel, such as we observe in the German empire, is considered by Lord Shaftesbury as an absurdity in politics; but what must we say to two equal wheels which govern the same political machine without any mutual check, control or subordination, and yet preserve the greatest harmony and concord? To establish two distinct legislatures, each of which possesses full and absolute authority within itself, and stands in no need of the other's assistance in order to give validity to its acts, this may appear beforehand altogether impracticable, as long as men are actuated by the passions of ambition, emulation and avarice, which have hitherto been their chief governing principles. And should I assert that the State I have in my eye was divided into two distinct factions, each of which predominated in a distinct legislature, and yet produced no clashing in these independent powers, the supposition may appear incredible. And if, to augment the paradox, I should affirm that this disjointed, irregular government was the most active, triumphant and illustrious commonwealth that ever yet appeared, I should certainly be told that such a political chimera was as absurd as any vision of priests or poets. But there is no need for searching long in order to prove the reality of the foregoing suppositions; for this was actually the case with the Roman republic.

The legislative power was here lodged in the *comitia centuriata* and *comitia tributa*. In the former, it is well known, the people voted according to their *census*; so that when the first class was unanimous, though it contained not perhaps the hundredth part of the commonwealth, it determined the whole, and with the authority of the senate established a law. In the latter every vote was equal, and as the authority of the senate was not there requisite, the lower people entirely prevailed and gave law to the whole State. In all party divisions, at first between the patricians and plebeians, afterwards between the nobles and the people, the interest of the aristocracy was predominant in the first legislature, that of the democracy in the second. The one could always destroy what the other had established. Nay, the one by a sudden and unforeseen motion might take the start of the other and totally annihilate its rival by a vote, which from the nature of the constitution had the full authority of a law. But no such contest is observed in the history of Rome; no instance of a quarrel between these two legislatures, though many between the parties that governed in each. Whence arose this concord, which may seem so extraordinary?

No instance is found of any opposition or struggle between these *comitia*, except one slight attempt of this kind mentioned by Appian in the third book of his civil wars.

There is some confusion as to the various Roman legislatures which it would be hopeless to attempt to disentangle in the brief space at our command. It seems, however, that another assembly, the *Concilium Plebis*, from which the patricians were excluded, was at a later date also vested with legislative power. But this assembly, though differing in its mode of action, was in the power it represented scarcely distinguishable from the *Comitia Tributa*. (See on this point Mommsen's *History* and the article on Roman Law in the *Encyclopædia Britannica*.) At a later period the Senate also acquired independent legislative power; and on the institution of the empire the emperor also. Accordingly, in Justinian's collections the different kinds of statutes are enumerated as consisting of *leges*, *plebiscita*, *senatus consulta*, *principum placita*, corresponding respectively to the several legislatures named in the text, and in this note.

CHAPTER I

OF THE NATURE OF THE STATE

§ 12 *Of the Definition of the State and of Its Several Kinds*

(1) From what has been said in the Introduction it may be inferred that political science in its present state is beyond all others prolific in logical fallacy and this conclusion will be found to be verified at every step of our further progress This arises not from any peculiar lack of ability in political writers—for as we have seen those who are responsible for these fallacies are the very foremost of their class and some of them preeminent among all classes in genius and even in logical capacity—but principally from two causes already adverted to that are characteristic rather of the age than of any particular class or individual—namely bias or prejudice and contempt or at least practical neglect of logic

The latter as we have observed is in great measure an effect of which the former is the cause For in the absence of disturbing causes to reason logically is for men of some clearness of intellect as natural as to walk in the right direction or if a mistake occurs it is readily detected But where men reason only to support preconceived opinions in whose favor they are warmly interested there is no absurdity of which they are not capable And it may be added as bias is the most fruitful cause of the non observance of the rules of logic so the rigid observance of those rules is the only effectual remedy for it

Hence in our own investigations to avoid the pitfalls into which others have fallen it behooves us above all things to be careful in our logical processes and on this account it will be found advantageous even at the expense of some appearance of pedantry to continue to make use of familiar logical rules and logical terms

Of all the fallacies to which political writers are addicted the most common and at the same time most serious is the fallacy of *petitio principii* or of the illegitimate assumption of first principles It has indeed been said that all logical reasoning necessarily involves a *petitio principii*, and this is so far true that in every syllogism the conclusion is in fact involved in the premises and when the premises are admitted inevitably follows And so in any legitimate chain of deductive reasoning however extensive the last conclusion is in fact involved in the premises first assumed or in other words in the first principles—as for instance the most recondite theorems of mathematics in a few simple maxims and definitions Nor is reasoning possible without the assumption of first principles Until these are agreed upon all discussion is mere sound

Generally our first principles must be obtained from observation of facts or in other words from experience and as all men are more or less observers and as the facts from which our notions in political and moral subjects are to a certain extent obvious there results necessarily a more or less agreement among men with reference to these matters and the conclusions thus reached are embodied in familiar speech and thus become established as part of the mental furniture of mankind Hence in deductive reasoning generally it is not required of us to go back to the ultimate principles of all knowledge but we legitimately commence with propositions which are regarded as established But in doing this it is essential for us to examine such propositions with care in order to satisfy ourselves there is no objection to them and to state them in such clear and unequivocal terms as to challenge the attention of our hearers or readers to their exact significance When this is done the assumption of the premises is not illegitimate or in other words there is no *petitio principii* But where our premises are so expressed as to entrap our hearers and perhaps ourselves into admissions that we would not deliberately make the fallacy takes place Hence the first step in reasoning is the careful consideration of our first principles with a view of determining whether we are prepared deliberately to assert and others to admit them And in this process as in the case of agreements generally there is in fact no agreement unless each party understands what is in the mind of the other and both fully appreciate the significance of the matter agreed upon

The most usual and formidable form of this fallacy is that of using question begging terms which consists either in including in the formal definition of a term some unproved assumption as being of the essence of the conception denoted or—without including such assumption in the formal definition—by using the term as though such assumption were implied By this method the propositions from which our conclusions are to be deduced instead of being proved as they ought to be are unconsciously imbibed by the mind with the definition or with our conception of the term and the conclusions thus in effect assumed In this way in fact nearly all modern writers proceed and either consciously or unconsciously seek to inculcate their opinions about the State by including them in their definitions of the term—thus assuming without any attempt at proof their own fortuitous conceptions as part of its essential nature And thus the idea or concept of the State in itself extremely definite and simple has become to be so obscured by the extraneous notions thus attached to it, as to render it almost impossible to perceive its simple essential features

The power of this method of persuasion is well understood by many and unscrupulously used (*a*) but with the mass of writers the fallacious process though none the less effective is entirely unconscious Hence if we would avoid error the necessity of a scrupulous attention to the definition of terms which is the essential condition of correct reasoning For to the lack of this nearly all the errors in political and moral science by which mankind are afflicted can be directly traced [*] Hence the rules of definition constitute perhaps the most important part of logical doctrine and too great care cannot be expended on their application

These rules though generally neglected are extremely simple in their nature and to some of them we will briefly refer

The use of a definition in logical discourse is merely to ascertain and determine the sense in which the term defined is to be used or in other words the whole office of a definition is simply to describe the class of objects denoted by the term In effecting this the definition must to some extent disclose the nature of the thing denoted by the term but it does so only to the extent necessary to fix the meaning of the term and beyond this it is not any part of its function to express the nature of the thing denoted

Another obvious rule is that while it is necessary for the definition of a term to contain enough to distinguish or define the class of things denoted by it from all other classes of things it is almost equally important that when this is effected it should contain nothing more In other words a correct logical definition to use the technical expression must be *per genus et differentias*—that is to say it must specify the general class to which the species of things denoted by the term belongs and the essential characteristics by which this is distinguished from other species of the genus or in other words the specific difference and the last i e the specific difference should contain only sufficient characteristics to distinguish the species and no more Having stated the essential characteristic necessary to distinguish the species all others may be demonstrated or proved by evidence and it is therefore illegitimate to assume them

Another rule—which will complete the list of those necessary to be referred to here—is that the words used in the definition should be more clear or more susceptible of definition than the term defined Or in other words that we do not fall into the error of trying to explain the unknown by something still more unknown (*Ignotum per ignotius*)

(b) The above rules have been habitually violated in the definitions given us by political writers and the result has been that the fallacy under consideration and especially that form of it which consists in the use of question begging terms is one of the most fruitful sources of political heresies A conspicuous instance of this is furnished by Austin whose theory as we have observed is wholly deduced from his assumed definition of the law which in turn derived its plausibility from the ambiguity of that term in our language in denoting at once *lex* and *jus* But in the current definitions of the State we will find equally conspicuous, and perhaps even more dangerous examples of this fallacy

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[*] As Hobbes says A man that seeketh precise truth had need to remember what every name he uses stands for and to place it accordingly or else he will find himself entangled in words as a bird in lime twigs the more he struggles the more belimed. — *Lev* pp 24 25.

Among these one of the most remarkable is the definition of Bluntschli and his American followers already adverted to which defines the State as an organism or as an organic being having a soul and body a will a conscience and active organs and in the opinion of Bluntschli even as being of the masculine gender (*b*) This is obviously an extreme violation of the third of the rules above specified which demands that the words used in the definition should be clearer than the term defined Here the term organism is used in an entirely new sense which is not defined and which it is extremely difficult to define It vaguely suggests that there are in the nature of man certain principles of action from which result certain characteristics of the State similar or analogous to those characterizing natural persons But what these elements of human nature and resulting characteristics of the State in fact, are, can only be determined by extended and laborious observation and even when determined they do not properly enter into the definition but belong rather to the theory of the nature of the State—the subject of our future investigations or in other words to the sequel rather than to the beginning of our discourse

Another example of vicious definition is given us by a late American writer who assumes among the peculiar characteristics of the organization which we term the State numerous qualities that may or may not belong to it—and which at all events do not properly belong to the definition—and among others the possession of absolute and unlimited power

The State ' he says is sovereign This is its most essential principle What now do we mean by this all important term and principle 'the sovereignty? I understand by it original absolute unlimited universal power over the individual subject and over all associations of subjects ' * This indeed is but an expression of the prevailing doctrine of sovereignty which has already been fully considered It is again alluded to simply for the purpose of observing that whether true or not the proposition has no place in the definition of the State or among the postulates or axioms of political science If the proposition be construed as referring to the actual power or might of the State its truth or falsity is to be determined by historical evidence or if it refer to the rightful power or right of the State by the principles of jurisprudence or right In either case if true it can be proved and hence to assume it in the definition or otherwise without proof is an illegitimate assumption or in other words a *petitio principii*

Numerous other instances of the same fault occur some of which are referred to in the note

(8) The above review of the current definitions of the State (though I fear somewhat tedious) will serve to guard us against errors into which it seems men are peculiarly prone to fall Thus guarded we will find no

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* *Political Science* etc Burgess Professor of History Political Science and International Law Dean of the University Faculty of Political Science in Columbia College. Vol I pp 51 *et seq* (*c*)

difficulty in arriving at a correct and satisfactory definition of the State the conception of which is extremely simple

Proceeding according to our logical rules the first step—which is without difficulty—is to determine the *genus* or superior class of which States constitute a *species* This *genus* obviously consists of societies or associations of men Of these some are natural—such as the family the tribe the city etc and others voluntarily formed or as they may be called artificial such as associations for business charity religion or any other purpose that men may desire to pursue in common Here we have to do with the former class only or natural societies and it will be understood we always use the term in that sense

Of societies of this kind there are numerous varieties as for example single families patriarchal families or clans (*gentes* γένη) village communities or wandering tribes cities or associations of villages feuds and States composed of feuds national States or States of the modern European type empires federal States independent and subject States and many others and to complete our definition our only task will be to determine which of these shall be included and which excluded and to ascertain the specific difference of the State accordingly

Here the first and most important difference is between societies that exist separately or independently and those which form part of superior associations The latter are merged in the higher associations of which they become part and thus cease to exist independently This process has in the history of mankind gone on naturally and inevitably until all other associations have finally merged into and become part of a State and in this manner as Aristotle lucidly explains the natural generation of the State has taken place The State therefore is the only autonomous or independently existing human society and this may be taken therefore as constituting the specific difference or at least an element of the specific difference of the *species* we call the State Whether any further element is required to complete the definition is next to be considered

In defining a term we must as far as possible conform to usage but the term State as commonly used varies somewhat in meaning and our definitions of it may therefore vary accordingly as we give it a greater or less extension But in its most general sense the term may with propriety be applied to all autonomous societies and the State may therefore be defined as an autonomous society of men And this is the sense in which I propose to use the term

Others however would restrict the definition so as to exclude some societies of this kind Thus a late writer—founding his opinion upon what I conceive to be a misinterpretation of the views of Aristotle—would exclude from the definition of the State the *gens* the village community the tribe and in fact all other associations historically anterior to the city *

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* *The City State*, by W Warde Fowler M A Fellow and Sub Rector of Lincoln College Oxford The mistake of Mr Fowler results from his not bearing in mind that the peculiar subject of Aristotle s treatise is the city (πόλις) and not the State generally

Again, a late American writer, Dr Mulford * deliberately adopts the term, "nation,' in place of the term 'State," and in this he is followed by the authors of the work on *Politics* already referred to (*b*) This of course, would be unobjectionable were it intended simply to distinguish the nation as one kind of State, instead of using—as seems to be their intention—the former term in the place of the latter as better expressing the conception denoted by it But this is, in effect, though perhaps unconsciously, to exclude from the definition of the State not only the village and the tribe, but also the city, which with the Greeks and Romans, was for a long time the only form of State existing But obviously this conception of the State as well as that of Mr Fowler, is too restricted For though in modern times when we use the term, the form of State we generally have in view is the modern national European State yet we also habitually apply the term more extensively and to give it the more restricted meaning would be in conflict with Aristotle's principle now almost universally accepted and which is undoubtedly the fundamental fact of political science that "man is a political animal,' and therefore necessarily always a citizen or member of a State, or in other words that he cannot exist in a stateless condition for according to this notion before the city there was no State We must, therefore regard all autonomous human societies as constituting States, and include in the definition all the several kinds of such societies enumerated above except the single family This we exclude simply because, in no period of history known to us, has the single family existed independently but even with regard to the family in its simplest form, as consisting merely of man and woman this also if we could conceive of it existing independently—as, for instance in the case of Adam and Eve in Paradise—might, with propriety, be called a State, or at least a State in embryo

Again, it is a very common error resulting from the general reception of the delusive doctrine of sovereignty that a society in order to constitute a State must be *entirely* independent of all external control, and this absolute independence is regarded as an essential element of the definition But this is certainly opposed to common usage, according to which we speak of *subject*, as well as of independent States, and of sovereign, and semi sovereign States

And though, of course, within certain limits men are at liberty to vary in their definitions, yet the definition contended for would be, not only inconvenient, but unscientific For history, in the past, and in the present, presents us with numerous examples of subject States—societies in which the dependence is so slight as not materially to affect the character of the society as a State—as, for example, the several States once wholly subject to Turkey, but afterwards independent in all respects, except in that of paying tribute The definition I have given would, therefore seem to be not only more in accordance with usage, but in all respects preferable

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* *The Nation passim*

There is indeed some difficulty in determining what amount of dependence would be sufficient to deprive the dependent society of title to the name of State but this difficulty occurs throughout all the departments of natural history—as for instance is illustrated by the difficulty in determining where vegetable life and where animal life begins and is therefore no objection to the definition In which the principle of distinction is the simple consideration whether the society in question has an independent existence or exists simply as a part of some other society or State This question though in some cases difficult is in general easily to be determined

I define a State therefore simply as an autonomous society of men By autonomous I do not mean complete and absolute independence of external control but simply such degree of independence as is inconsistent with the notion of the society referred to being an integral part of another State And it may be added that by the term society a certain degree or kind of permanence is necessarily implied For the term itself according to its etymology and also according to its habitual use denotes an aggregation of companions or habitual associates

In this definition we have omitted an element almost universal namely the permanent occupation of a common territory This however cannot be regarded as an essential element of the notion of the State which may be conceived and has in fact existed in a migratory condition as for instance the Israelites in their wanderings and the German tribes prior to their settlement Indeed in the history of the race the first principle of association is that of kinship and it is by this principle that the State is first recognized and determined the influence of the common territory in determining the State is of later origin But such a condition can exist only in primitive times and we may therefore without error leave it out of view and regard the permanent occupation of a common territory as an element in the definition In other words in our investigations we may confine our consideration to the subject of territorial States

A still more important omission from the definition seems to be that the element of government is apparently omitted History nowhere presents us with a society of men absolutely without government or political organization and we might therefore confining ourselves entirely to the facts historically known to us include this element in our definition But this would be to violate the rule that the definition of a term should contain no more elements than are necessary to define the class denoted as for instance as if we should define a triangle as a three sided figure having three angles The State being thus defined it may be conclusively inferred from the nature of men as known to us in history and otherwise from experience that in every State the fact of government must so far as our experience goes also exist But it is possible that in prehistoric times men existed without government and that in some higher state of human development in the future government may be come unnecessary I prefer therefore to regard government or political organization not as an essential element but as an inseparable accident of the State No material error will be involved however in including it in the definition and in deference to common usage and for convenience otherwise the State may be defined as an autonomous politically organized society or as Austin defines it an independent political community

Thus defined States may be variously classified either historically as the primitive village or tribe the ancient and the mediæval city the feudal State the modern national State etc or logically as subject and independent States or as simple and complex States etc

Of the last an instructive example is furnished by the feudal regime in which the several feuds each in itself a State constituted in effect a federal State Historically this system is a subject of capital importance and deserves the most careful consideration but except for purposes of illustration will not be considered in this work

To us a much more important example of the complex or composite State is presented by what is called the federal State as developed in modern times—a subject of extreme interest and to which we must devote a somewhat extended consideration

Before passing to this however it will be observed that our definition does not include leagues or confederations of States These indeed are political societies but of States not of men and more properly therefore fall under the subject of the external relations of States They however constitute a most important subject for consideration and perhaps in them alone is to be sought the realization of what the Germans call the *idea* as distinguished from the *concept* of the State and which is to be realized only in the *world State*

§ 13 *Of the Federal State*

A federal State instead of occupying exclusively a certain territory in fact occupies the territories of the constituent States out of which it is formed in common with those States and thus the people which constitutes it consists of the peoples of the several States regarded for certain purposes as one people It differs essentially as we have observed from a federation which is a mere league of States and in which the community constituting the confederacy consists of States and not of men while a federal State is not a community of States but a people precisely as in the case of a simple State On the other hand the federal State as well as its constituent States differ from the ordinary or simple State in this that the powers of the former as well as those of the latter are each definitely limited or in other words the sovereignty or aggregate of the sovereign or supreme political powers is divided between the federal and the constituent States so that each is sovereign in the definite sphere of political action allotted to it and no further Hence in a federal union there are always several communities or peoples occupying a common territory namely the community or people of the federal State and the communities or peoples of the several States and thus in each of the constituent States there are two peoples or communities consisting of the same individuals or rather one people or community and part of another that is to say the people or community constituting the constituent State and the part of the federal people or community occupying the same territory

Of this kind of State the most instructive instance is that of the United States of America the general nature of which is sufficiently familiar and from which our description of the federal State has in effect been taken and which we will further consider Briefly this State was voluntarily formed by several independent States upon the principles agreed upon and inserted in the Constitution which thus constituted not only a national Constitution but a contract or obligatory agreement between the several States By the provisions of that instrument certain powers were conferred upon the federal government and it was expressly provided that powers not delegated to the United States by the Constitution nor prohibited by it to the States are reserved to the States respectively or to the people * Hence the obvious distinction universally recognized by all competent jurists and publicists between the federal constitution and those of the several States the former is an express grant of powers to the federal government which is vested with no powers except such as are granted to it either expressly or by implication the latter is a mere limitation upon the general sovereign powers vested in the State Hence it follows that each government is paramount supreme or sovereign with reference to matters within its own sphere of rights but any act of the federal government or of a State government in excess of its powers is absolutely void and may be disregarded not only by any State or by the federal government but by any individual Hence also (which is but another statement of the same proposition) the sovereign or supreme political powers are divided between the federal and the State governments each being sovereign in its own sphere All this though often ignorantly disputed has uniformly been asserted by the Supreme Court of the United States as well as by jurists generally and as is well known to all lawyers is the established law of the land (*d*)

This view of the nature of the federal State is at once simple and entirely rational and it may be added is the view generally entertained by American lawyers and jurists of all political faiths But outside of the legal profession it is generally repudiated by American writers north of Mason and Dixon s line and the opposite doctrine—namely that the federal government is alone supreme and the States entirely subordinate —is generally received among the writers of that section of the country and has in fact colored not only their political and even their histori cal writings but their whole literature This view has also become a matter of popular faith with the members of a great party to whom the very name of States rights is offensive—and it is also very largely if not generally received among European publicists On this account if not for its intrinsic merits the opinion demands and will receive a critical examination

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* Const U S Amend XII

The opinion in question rests wholly upon the doctrine of absolute sovereignty which has already been considered at length and from which it must be admitted the conclusion is logically deducible For if it be true that the sovereignty is unlimited and indivisible and that it is vested in the federal government it follows that a federal State is at once a practical impossibility and a logical absurdity

For obviously in general no State would ever be willing to enter into a federal union if the doctrine be recognized that by doing so it would part altogether with its sovereignty and subject itself to a foreign domination and that too according to the assumed doctrine a domination absolute and unlimited in its nature Certainly had such a doctrine been broached in the constitutional convention which framed the federal constitution the federal union would never have come into existence nor can it now be asserted without violating every principle of good faith

But independently of this the doctrine is logically absurd for if it be assumed that the sovereignty is indivisible it would follow that in every so called federal union it must be vested exclusively either in the federal State or in the several constituent States and that the former must be subordinate to the latter or the latter to the former But obviously upon the former hypothesis the union would be a mere confederacy or league of States and upon the latter it would differ in no essential particular from the ordinary or simple State for in such case the subordinate States would be nothing more than mere municipalities such as universally exist in all States

It would be an endless task to enumerate all of the disastrous consequences that have resulted not only to political science but to the practical interests of men from this purely fictitious notion of sovereignty but the subject may be sufficiently illustrated by observing in connection with the present subject that from this doctrine—the fruit of a question begging term—there has resulted in our own history nearly a century of bitter conflict ending in four years of destructive war and it is to be feared in the permanent alienation of the two sections of the country For upon the assumption that sovereignty is indivisible a proposition accepted by both sides it is clear as we have observed that either the federal government is sovereign and the States subordinate or the States sovereign and the federal government a mere league or compact and, as both propositions are equally untenable it was impossible in the long controversy between the North and South for either party to be convinced and nothing was left but the arbitrament of arms It may be said, therefore, that the great civil war was but a logomachy, or fighting about a word

Other causes doubtless concurred in bringing on the war, such as slavery and the tariff; for it cannot be doubted, on the one hand, that, with those in the South who owned slaves, the protection of their property was a strong motive, or, on the other, that, with a large, wealthy and influential class at the North, the preservation of a market was an equally controlling consideration But no one who is familiar with the history of the contest, and especially with opinion and sentiment, as it existed both at the North and the South immediately before the war, can doubt that the paramount issue in the minds of the great mass of honest people was the relative supremacy of the federal and the State governments, or that this question originated in the absurd *doctrinaire* notion of the indivisibility of sovereignty, or, in fine, that this notion was the ultimate cause of the war

§ 14. *Of the Historical Origin of the State.*

The subject of the historical origin of the State—which must not be confounded with what may be called its *causal* origin, or *raison d'être*, or cause of existence of the State — a very different subject—is one of great interest, but its consideration does not belong to the theory of the State, except in so far as it may serve to illustrate or verify the principles involved in the discussion A brief consideration of it will therefore be sufficient

With regard to modern States, we are, in general, able to trace back the history of each to its origin, but this is not true of the ancient States, whose beginnings are shrouded in the mists of antiquity All, therefore, that we can know of the origin of the primitive State, with the exception of a few historical facts, is confined to such inferences as may be drawn from the nature of man, but from this, the general course of the original genesis and development of the State is sufficiently obvious. The primitive society is the family; and out of this, even in the absence of other supervening causes, must inevitably grow, as from a germ, the larger society, which we call the State, whether the village or tribe, the city or the nation. Other causes may indeed concur in the development of the State, the chief of which is war or conquest, but without these the same course of development must inevitably take place.

§ 15 *Of the Causal Origin, or Raison d'Être of the State.*

Hence, therefore, passing to the *causal* origin, or *raison d'être* of the State, it is evident that it does not need the refined hypothesis of a social contract, or of direct divine appointment, to justify its existence, but it is to be regarded as a naturally existing phenomenon, in the same sense as man himself exists. Hence, also, it seems to be an absurdity to speak, as many do, of "the State of nature," as opposed to the social State; for the social State is, in fact, the natural State of mankind, and the State of nature but another name for it The term is indeed very commonly used to denote what may be more properly called the anarchic State or society without government but in this sense it denotes a purely fictitious idea which has probably never existed and which unless human nature becomes radically improved can never exist For it is evident from the most superficial observation that the nature of men is such as to impel them irresistibly to live in society and that in order for them to do so government is essential Hence as rightly defined by Aristotle man is by nature a political animal (ἄνθρωπος φύσει πολιτικὸν ζῷον Pol 2 § 9) in which principle we have the cause of the genesis and continued existence of the State the end or at least the effect of which is to secure the existence of the conditions necessary to the life and to the welfare or happiness of man Or as expressed by Aristotle the State is first founded in order that men may live but continued that they may live happily Hence we may admit with Burke that the State is not a partnership in things subservient only to the gross animal existence of a temporary and perishable nature but a partnership in all science a partnership in every virtue and in all perfection *

§ 16 *Of the Distinction Between the State and the Government*

But in accepting this proposition it is necessary to distinguish carefully between the State and the government Government or political organization is a necessary and perhaps essential part but not the whole of the State Outside of the government there is *the people* for whom the government exists and for whom all political power is held in trust The State therefore must be conceived as consisting of the government and of the people The end and the corresponding function of the State is to promote the happiness or well being of the people in every respect but the agencies by which this is effected are twofold namely by government which is organized force and without the intervention of government by the natural influence of men upon each other and by voluntary cooperation Hence the end and corresponding function of government is not coextensive with that of the State and the proposition we have asserted of the one cannot be accepted as true of the other We must then next inquire in what the necessity of government consists or in other words its *raison d etre*

§ 17 *Of the Causal Origin or Raison d Être of Government*

While man is irresistibly impelled to live in society there exist also in his nature certain anti social tendencies which unless restrained are irreconcilable with the existence of social life These result from the undue empire of the self regarding principles of his nature which in general overmaster his regard to the well being, and even to the rights of others. Thus, in the absence of restraint, he is, by his own evil desires, and from the fear of like treatment from others, almost irresistibly impelled to invade and attack his neighbors, and by means of force or fraud to subject them to his own power, or, in the expressive language of the law, to convert them and their property to his own use. Hence results the necessity of government, without which there would necessarily exist a universal and continuous conflict between men, which it would be no exaggeration to call, with Hobbes, a condition of permanent war of "every man against every man."* Hence, we may conclude with him, that "the final cause, end, or design of men, who naturally love liberty (in themselves), and dominion over others, in the introduction of that restraint upon themselves in which we see them live in commonwealths, is the foresight of their own preservation, and of a more contented life thereby, that is to say, of getting themselves out from that miserable condition of war which is necessarily consequent to the natural passions of men when there is no visible power to keep them in awe "†

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* The reader will perhaps recognise the last observations as taken from Sir Frederick Pollock s *History of the Science of Politics* No 42 Humboldt Library pp 49 50 But as will be seen this must not be taken as indicating any very considerable identity of our views in general

But in agreeing with Hobbes on this point, it is not necessary for us to accept also his psychological theory (in which he is followed by Bentham and Austin), that men act always from selfish motives, and are incapable of any other. The sentiments of benevolence and justice, though less strong, are as really principles of human nature as is regard to one's own interest. In this respect, the views of Mr. Calhoun are more just, yet equally sufficient to establish the conclusion reached. The question and the solution of it is thus stated by him.

"What is that constitution of our nature, which, while it impels man to associate with his kind, renders it impossible for society to exist without government?

"The answer will be found in the fact that, while man is created for the social State, and is accordingly so formed as to feel what affects others, as well as what affects himself, he is, at the same time, so constituted as to feel more intensely what affects him directly, than what affects him indirectly through others, or, to express it differently, he is so constituted, that his direct or individual affections are stronger than his sympathetic or social affections. I intentionally avoid the expression, selfish feelings, as applicable to the former, because, as commonly used, it implies an unusual excess of the individual over the social feelings, in the person to whom it is applied, and consequently something depraved and vicious.

"But that constitution of our nature which makes us feel more intensely what affects us directly than what affects us indirectly through others, necessarily leads to conflict between individuals. Each, in consequence, has a greater regard for his own safety or happiness, than for the safety or happiness of others, and, where these come in opposition, is ready to sacrifice the interests of others to his own. And hence the tendency to a universal state of conflict between individual and individual; accompanied by the connected passions of suspicion jealousy anger and revenge —followed by insolence fraud and cruelty and if not prevented by some controlling power ending in a state of universal discord and confusion destructive of the social State and the ends for which it is ordained This controlling power wherever vested or by whomsoever exercised is government

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* *Lev.*, Chap. xiii.

† *Id.*, Chap. xviii.

It follows then that government has its origin in this twofold constitution of our nature the sympathetic or social feelings constituting the remote and the individual or direct the proximate cause [*]

§18 *Of the So called Organic Nature of the State*

As the State is but a certain kind of aggregation of men it is clear that the nature of the State as well as its genesis is determined by and must be sought in the nature of individual man (e) Proceeding on this principle we investigated in a preceding section what we called the *causal* origin or as it may be called the *genetic* or generating cause of the State and this we have found to consist in certain traits of human nature which may be called social that irresistibly compel men to live in a State of society and hence that the State is to be regarded as a natural phenomenon that—given the existence of man—must necessarily exist Which indeed might have been inferred from the term itself which—according to the etymology—signifies nothing more than a *state* or *condition* of men In like manner we also investigated the *causal* origin of government which we found to consist in certain traits or tendencies of human nature (which may be called anti social) that render political organization a necessary condition to the existence of society In solving these problems we have necessarily to a certain extent ascertained the nature of the State that is to say we have ascertained it to be merely an autonomous society of men always existing under a political organization or government and from these propositions—meagre as they are—some negative inferences may be drawn that will at least serve to dissipate more effectually certain false notions of the nature of the State already touched upon and thus to preserve us from error

The State being a mere aggregation of men living under certain conditions cannot, strictly speaking be said to have intellect or conscience or will or consciousness or power either in the sense of right or might or any human quality moral mental or physical nor can it be regarded as an actual individual being or as having an actual independent existence Like other collective terms such as army church family *gens* race etc the term denotes merely a certain number of human beings aggregated in a certain way and hence all human qualities and acts ascribed to the State or to the government are in reality merely qualities or acts of the individual men composing it, or of some one, or more of them It is, for example, as impossible to conceive of a single will or conscience, made up of the wills of several individuals, as it is to conceive of a single man made up of several. The problem of the nature of the State, therefore, is simply the problem of the nature of the individual man in his social relations.

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[*] *Disquisition on Government* 5 This is justly described by Mr Mill as a posthumous work of great ability and the author as a man who has displayed powers as a speculative political thinker superior to any who has appeared in American politics since the authors of *The Federalist* (*Representative Government* p 329)

Yet, such is the nature of men, when brought together in society, that a certain unanimity of moral judgment, and of opinion in general, and a corresponding unity of action, always result, as is exhibited in every sphere of social life · in the family, in the associations of friendship, in general society, in business relations, and, finally, in the greater society we call the State. This unanimity, in a certain degree, is in fact essential to the social existence of men, and in this case, as in others, nature has provided for it by endowing men, more or less perfectly, with qualities necessary to produce it, such as reason, and perhaps instinct, the affections, and benevolence generally, and justice, and especially the disposition to conform to the general opinion and conduct of the community, or, in other words, to *authority* and *custom*, which are the instruments by which the intelligence and conscience of the community most effectually assert their authority

This tendency to unanimity of thought and action permeates all the different spheres of social life, from the family to the State inclusive; and under its action there are developed, as it were, naturally and automatically, certain principles or rules of conduct, by which men are governed, and to which they voluntarily conform their conduct. Of this nature are the rules of society, the laws of fashion, the laws of honor, etc.; all of which strongly illustrate this natural tendency of mankind, in all spheres of society, to evolve involuntarily, and almost unconsciously, some common standard of thought and action to which they voluntarily conform. But of this tendency the most conspicuous and important example is furnished by its operation in that largest of all social spheres—the State And of this the results are threefold, viz : as affecting questions (1) of justice, (2) of morality generally, and (3) of expediency and propriety, with reference to each of which there is evolved, in every State, under the influence of this natural tendency of men, a body of opinion and sentiment in which all, or nearly all, concur. Of these results the first constitutes—as we shall see—the Law or Positive Right of the State, which in reality constitutes a part of Morality, but is distinguished from morality generally by the fact that it constitutes the principal and sole essential end of government. The second constitutes the *Positive Morality* of the State; and the third is what is commonly spoken of as *Public Opinion*; of which that which relates to political matters, or *Political Opinion*, mainly concerns us here.

The nature of this consensus of moral convictions, the method of its genesis, its rightful authority, and the instrumentalities by which it is enforced, though a subject of fundamental importance in jurisprudence, and in politics generally, is too extensive to admit of adequate discussion here, but the following brief statement of the principles applying to the subject will, perhaps, be sufficient for our present purpose (*f*) There is in some way generated in every man, as it were, a code of moral convictions, or principles, by which, in ordinary cases, he instantaneously, and without reflection, judges his own actions and those of others to be right or wrong. There is also in every man a faculty—whether innate, or acquired. it is unnecessary here to inquire—by which he perceives the duty or moral necessity of conforming to the right, and this conception is accompanied by sentiments of approbation or disapprobation with regard to his own actions and those of others, and with regard to the former, the sentiment of conscious rectitude or remorse. The combination of these moral convictions, with the faculty of perceiving the duty of conforming to them, and the accompanying sentiments, together constitute what is called conscience—the existence of which, whatever difference of opinion there may be as to its nature, cannot be denied It is this which constitutes to every man the proper standard or test of right and wrong by which his conduct—at least with regard to matters concerning himself alone—is, or ought to be, governed.

Men, however, acquire their moral convictions to a great extent from education and association with others; or, in other words (as indicated by the etymology of the term "morality" and kindred terms), from custom, and this is to be regarded, not as accidental, but as the result of the law of his nature. Hence, every aggregation of people have a morality, to some extent, peculiar to themselves, and the moral principles of one age or nation are somewhat different from those of another. But under all these diversities there is always a substantial conformity with respect to fundamentals, and especially, in every nation or people, there is always a body of moral principles, universally or almost universally recognized, which becomes embodied in the language and habitual thoughts of the people, and wrought, as it were, into the conscience, of every individual. It is this which constitutes the positive or received morality (*mores*) or, as the Greeks call it, *nomos*, of a nation or people; and it cannot be doubted that in all questions of common concern it should be held to be of paramount authority, and this for three reasons For, first, the positive morality of the present age is the result of the never-ending struggle of mankind to realize theoretical morality—a struggle to which, from the beginning of history, the highest intellect and conscience of the race, have been consecrated—and it, therefore, carries with it the strongest presumption of its truth, secondly, no reason, except, where applicable, that of necessity, can be assigned why the conscience of one man or set of men should be forced upon others of different convictions; and, hence, in political affairs, there is no alternative between the acceptance of this standard, or of submission to arbitrary power, and hence, also, free government is possible only to the extent that this general conscience, or *consensus* of moral conviction, is developed; and, thirdly men, as it were, by some instinct of their nature in fact involuntarily accept and submit to this test as a standard of practical morality, for as is well observed by Mill, ' the customary morality that which education and opinion have consecrated is the only one that presents itself to the mind with the feeling of being in itself obligatory ' (g)

All this is especially true with reference to that part of Morality that deals with Right or, in other words, Jurisprudence—the peculiar matter with which government is concerned , with reference to which it may be asserted that the general conscience or positive morality of the community is, in fact ultimately, and in the long run the paramount predominating political force in the civilized world , that it is this alone that makes civilization possible , and that in the superior development of the sentiment of rights is to be found the essential difference by which modern civilization is to be distinguished from that of the ancient world and of inferior civilizations generally , and finally, as in the past that all future progress in political civilization must consist in the development and perfectionment of this sentiment

Summarizing these results, it will be observed, that the genesis, the continued development, and the action of the State is, to a large extent, automatic but, not wholly so The State must exist , and so far, it may be said its genesis, and its continued existence is a natural phenomenon , and it may be said also that its gradual development is largely of the same character But both in its original creation and subsequent development, conscious human agency concurs and with advancing civilization in an increasing degree So also, with regard to the conduct of the State, this while to a large extent automatic, is also, to a large extent, determined by conscious human agency Hence arises the obvious distinction between the functions of the State that are automatically performed or more briefly its automatic functions and those that are performed by the conscious agency of men , the latter of which may be called *political*—as being performed by government—and the former, *non political*

Government, as we have observed, is so far as our experience or observation goes, an invariable element in the form of the State, or, in other words the State has always manifested itself to us as politically organized, and this may be assumed, therefore, as its normal character In this aspect, the State—i e, the politically organized State—is to be regarded —as we have heretofore observed—simply as a large corporation, or body politic, differing in no essential particular from private corporations, except that it is not, as in other cases merely the result of human volition, but to a large extent a natural growth, and, at least, to the extent of its existence, a natural and, therefore, a necessary phenomenon Hence, we may regard the State, politically organized, as a fictitious, or imaginary person or being , and this conception will be found extremely convenient, and provided we bear in mind that it is a pure fiction, also safe

Indeed, it is difficult, and perhaps impracticable, for us to dispense with this mode of expression For it is impossible not to recognize, or at least, not to imagine we recognize, in this "our artificial man"—as Hobbes calls him—the familiar lineaments and qualities of an actual man, or to refrain from thinking and speaking of him accordingly. And to this usage, properly guarded, no objection can be made For so numerous and striking are the resemblances, or rather the analogies, between the State and the individual man, that the most convenient, and therefore the most natural, way of describing the qualities and actions of the former, is to apply to them the terms we use with reference to the latter. Accordingly this has become the settled usage of our own and other languages, from which, even were it otherwise desirable, it is now too late to depart.

This usage is indeed in some respects extremely misleading and dangerous, but the same is true of language generally, throughout which the same method of expressing mental conceptions by terms originally appropriate only to physical objects universally prevails; and hence, out of such analogies, arises the wonderful power of fallacy—or, to be more accurate, the wonderful *fallacy producing* power—contained in words—a power unsuspected by the multitude, but recognized by all profound thinkers, and practically illustrated in the most conspicuous and striking manner, by the justly distinguished writers we have reviewed; and which we will, again and again, have occasion to observe in the further progress of our inquiries But fortunately, against this power, it is practicable for us effectively to guard ourselves by simply observing, and always bearing in mind, where we use a word in a transferred sense, that it is with an essentially different meaning from that originally denoted, and that the resemblance between the conceptions denoted respectively by the secondary and the original senses of the term is not a resemblance of essential nature, but a mere analogy, which may be useful in suggesting, but is incapable of accurately expressing the conception denoted by the former.

Hence we may, without impropriety, and, bearing in mind the above caution, without danger, apply this usage to the State, and speak of "its will," or "its conscience," as though it were a man; and, indeed, in the present state of language, it is difficult otherwise to express ourselves But in fact these expressions, taken literally, and all theories founded on their literal sense, are without signification, or, in other words, *nonsensical.* For both terms, and other terms expressing human qualities, are strictly relative, and imply, as a correlative, an actual human being in whom to exist.

The two expressions commented upon—"the will of the State," and "the conscience of the State"—when rightly understood, are equally innocent, but it cannot be said that, in their actual influence on political science, they have been equally innocuous. By the former is meant nothing more than the concurring wills of the individuals, or of some of the individuals who possess the political power; but it has been commonly understood in its literal sense, or *non sense,* and as we have seen has thus given rise to the equally nonsensical but pernicious doctrine of absolute sovereignty and other misleading notions But the expression the conscience of the State or the equivalent expression the conscience of the community or—as I prefer to call it—the general conscience while perhaps equally misunderstood is not susceptible of being perverted to evil uses and indeed its literal sense so strongly suggests the actual fact or phenomenon to which it refers and which it is designed to express—namely the received or positive morality of the community—that its use has been almost purely beneficial

Hence—to conclude—while we may not say that the State is an *organism* or an *organic being* —for this seems to assert not as a convenient fiction but as an actual fact that the State is an animal—yet we may without impropriety say that it is *organic* in its nature—meaning thereby that its genesis and development though partly artificial are to a large extent natural or governed by natural laws and that its functions though partly performed by the conscious agency of the men intrusted with government are also to a large extent automatic And indeed I know of no other way to express in brief terms these conspicuous and important characteristics of the State Only in conforming to this usage it is always to be remembered that the organic nature of the State is *sui generis* and especially that it is essentially different from that of an *organism* or living being with which it has nothing of essential nature in common

Thus defined the proposition that the State is organic in its nature expresses a profound truth For though the State is organic only in the peculiar sense we have defined and although even in this sense the proposition is only partially true yet it may be that in some more advanced state of social civilization it may become wholly so and that the performance of the functions of the State may become wholly automatic and government be dispensed with

NOTES

(*a*) The advocates of the doctrine of governmental absolutism fully realise the truth of the observation of Rousseau, that "the strongest is not strong enough to continue always master unless he transforms his power into a right and obedience into a duty (*Social Contract* Chap iii) and that for this purpose no method is so effective as the fallacy in question

(*b*) *Supra* pp 19 193 See also *Politics* by William W Crane and Bernard Moses Ph D Professor of Political Economy in the University of California who follow Bluntschli and Mulford in this definition

This use of the term organism and the adjective organic is purely metaphorical Provided this be understood there is no objection to this use of the terms, and they may perhaps be used with advantage as is done by Krause to distinguish what as will be seen I take to be the true theory of the nature of the State In thus using the term however it must be understood that it is used in an entirely new sense and one essentially different from that of the term "organism," as denoting animal and vegetable beings. This method of using the term is admirably illustrated by the sober, accurate and able *Cours de Droit Naturel* of Mr Ahrens, which is avowedly an exposition of *The Organic Theory* of Krause, and in which the author is not misled by the associations of the term, nor indeed, except in one particular, by any of the prevailing delusions as to the nature of the State. With regard to the exception alluded to, Mr Ahrens appears to be emancipated altogether from the prevailing doctrine of sovereignty, and admits that the power of the State is not only limited, but is also divisible in its practical application, yet he adheres to the notion that it is indivisible in its source, namely, the State, which constitutes the national sovereignty (*Cours de Droit Naturel*, Vol ii, pp 359, 360) But this, as we have observed, is also a meaningless assertion.

(*c*) Thus, one of the characteristics of the State alleged by Mr Burgess is, that "the State is permanent," by which, from the context, it appears that he means to assert, either that it cannot, or that it ought not to be dissolved, otherwise than by natural causes "It does not lie," he says, "within the power of man to create it to-day and to destroy it to-morrow, as caprice may move him" And the same notion is expressed by Dr. Mulford (*The Nation*, p 6) But if reference be made to the *fact*, nothing has been more common in history than the dismemberment and destruction of nations by external foes, or even by the people of the State itself, and if to the *right*, it is difficult to perceive any grounds upon which we can assert it to be universally true That in general a State should not be disrupted, is an obvious proposition. But numerous cases have occurred in history in which it may be safely said that the State ought to have been dissolved Thus, the Roman empire was in fact formally dissolved upon the partition of the east and the west by Arcadius and Honorius, and it is very probable that, had this partition been deliberately made a hundred years before, good results would have followed. And, indeed, it is not unreasonable to suppose that in the decadence of the Roman empire, after its great work had been accomplished, it would have been for the interests of the human race had a more general partition taken place, as for instance, in the west, between Italy and the western provinces, and in the east, between the European and Asiatic provinces. And it is certainly to be hoped that at least one great State of modern times (I refer to Russia) may, at some future period, be dissolved, as otherwise, sooner or later, it will dominate the world

Other instances of faulty definition, though of less importance, are the following Sidgwick defines the State, as "a body of human beings deriving its corporate unity from the fact that its members acknowledge permanent obedience to the same government, which represents the society in its collective capacity, *and ought to aim in all its actions at the promotion of their common interests*" (*Elements of Politics*, pp 211, 212) The last clause, though perhaps true, is not appropriate to a definition, but is to be established by an investigation of the principles of jurisprudence

Similar faults are also presented by the following definitions, all of them by approved authorities.

"A State, in the meaning of public law, is a complete, or self-sufficient body of persons united together in one community, *for the defense of their rights, and to do right to foreigners*" (Bynkershook, N J Pub., Bk. I, Chap xvii)

"The State (*civitas*) is a perfect (that is, independent) collection of free men associated, *for the sake of enjoying the advantages of right or justice, and for common utility*" (Grotius, Bk. I, Sec 14).

"Nations or States are bodies politic, societies of men united together *to procure their mutual safety and advantage by means of their union*" (*Vattel*, Introduction, Sec 1)

"The State (is to be regarded) as an association *for the purpose of establishing right*" (*Como la sociedad para derecho*) (Krause, *The Ideal of Humanity*, Trans of Sanz del Rio, p. 48).

In all of these definitions the end or duty of the State to provide for the rights and for the welfare of its citizens, is inserted as an element of the definition, to which it is not appropriate. What is the true end or function of the State, is, indeed, an important question, and I do not say that it is not here correctly stated, but to insert it in the definition makes the definition in fact false. For States are formed either by natural causes existing in the nature of man, inevitably driving him into society, or by force or violence, exercised by men at least with the predominant motive of advancing their own interests.

Again, the definition of Cicero (*Republic*, Bk 1, Sec 25) is also objectionable. "The State (*respublica*) is the collection of a multitude associated *by a common sense of right and a community of interests*"

A common sense of right and a community of interests generally result from the establishment of a State, but even if this proposition were universally true, it would not be appropriate to the definition And, indeed, a State may exist with little or no "common sense of right," or "community of interests," as for instance, the great Asiatic despotisms, and perhaps many European empires.

The definition of Aristotle, who defines a State or city to be "a certain number of *citizens*" (*Politics*, Bk ii, Chap i), and that of Austin who defines it "as an independent political society" (*Jur*, p. 249), are both free from objection, at least in this respect.

(*d*) "In American Constitutional Law, there is a division of the powers of sovereignty between the national and State governments by subjects, the former being possessed of supreme, absolute and uncontrollable power over certain subjects throughout all the States and Territories, while the latter have the like complete power, within their respective territorial limits, over other subjects"—Cooley, *Constitutional Limitations*, p. 2.

"In the case now to be determined, the defendant (in error), a sovereign State, denies the obligation of a law enacted by the Legislature of the Union (p. 400) The government of the Union, though limited in its powers, is supreme within its sphere of action (405) (But) Should Congress, under the pretext of executing its powers, pass laws for the accomplishment of objects not intrusted to the government, it would become the painful duty of this tribunal, should a case requiring such a decision come before it, to say such an act was not the law of the land (423)

"The sovereignty of a State extends to everything which exists by its own authority, or is introduced by its permission, but does it extend to those means which are employed by Congress to carry into execution powers conferred upon that body by the people of the United States? We think it demonstrably does not" (429 —Marshall, C. J, 4 Wheat, 400

"The federal government is supreme within the scope of its delegated powers, and the State governments are equally supreme in the exercise of those powers not delegated by them nor inhibited to them From this it is clear, that, while these supreme functions are exercised by the federal and State governments, within their respective limitations, they can never come in conflict, and when a conflict occurs, the inquiry must necessarily be, which is the paramount law? And that must depend upon the supremacy of the power by which it was enacted The federal government is supreme in the exercise of powers delegated to it but beyond this its acts are unconstitutional and void So the acts of the States are void when they do that which is inhibited to them, or exercise a power which they have exclusively delegated to the federal government."—License Cases, 5 Howard, 588.

"Although the State of Wisconsin is sovereign within its territorial limits to a certain extent, yet that sovereignty is limited and restricted by the Constitution of the United States, and the powers of the general government, and of the State, although both exist and are exercised within the same territorial limits, are yet separate and distinct sovereignties, acting separately and independently of each other, within their respective spheres."—Ableman *vs* Booth, 21 How, 516.

(*e*) This is well explained by Mr Ahrens:

"Before him (Aristotle) Plato seized still more profoundly the intimate relation between the man and the State, when he conceived the order of right, as above all, an order which each man ought first to realise in his own internal nature, of which society is always more or less a reflection. For this reason Plato saw in each man a State in miniature ('micropolis'), as he saw in society man enlarged ('writ large'). The same opinion is professed by Krause. . . . The State, without doubt, . . . must always be, in its organisation, and in the forces and modes of its activity, the mirror of the interior and moral state of its members, of the condition, more or less elevated, of their intelligence, of the sentiments and motives with which they are inspired in their actions As Christ said 'The kingdom of God is within you,' Plato and Krause say The State, which ought to realise the divine idea of right, is originally in you" (*Cours de Droit Naturel*, § 106)

(*f*) For this subject the term Nomology, or the science of Nomos, or positive morality (mores), would be an appropriate name It would treat of both the theory, and the natural history, the mode of genesis, and existing state of positive morality, and of its relation to theoretical morality.

(*g*) "There can be no democratic State, unless the mass of the population of a given State have attained a *consensus* of opinion in reference to rights and wrongs, in reference to government and liberty" There must be a "common custom, and a common consciousness of rights and wrongs" (Burgess, *Political Science*, Vol I, pp 81, 82) It will be observed that all modern European States are regarded by Mr Burgess as democratic

CHAPTER II

Of the Functions of the State Generally

§ 19 *Of the Relation Between the Functions, and the Rights of the State*

The end of the State, as we have observed, is not only to insure the safety and peace of the individuals that compose it, it extends also to the promotion of their welfare in other ways But this end as we have seen is accomplished not by means of government exclusively but also and perhaps chiefly, by individual action and the natural influences of society upon men The functions of the State are therefore, to be divided into two classes essentially different from each other, viz, the automatic or non political functions and the political functions or functions of government The former constitute a subject of great importance, which we have already touched upon and will again refer to, but in the present chapter we will confine our attention to the political or governmental functions of the State only, and as these are all exercised by the government, we may with regard to them, use the term *government*, instead of *State*, which will be found to be the most convenient form of expression

By the expression, the functions of the government, or the political functions of the State, is meant simply the duties of the government, considered generally, or, in other words, the modes in which the powers or rights of the government ought to be exercised The relation existing between the functions and the rights of the government is, therefore, obvious The government is rightfully vested with all the powers necessary to the efficient performance of its functions and the extent of its rights is to be determined by this necessity On the other hand, the exercise of any function by the government is the assertion of an assumed right and can be justified only by establishing the right The question of *function* and the question of *right* are, therefore, so closely implicated that the one cannot well be considered without touching upon the other

The two questions, however, are not to be considered as identical, for obviously the rights of the government are more extensive than its functions, for the functions, or duties of the government, under different circumstances, are infinitely various difficult to determine and admitting of great variety in the mode and means of performance, and hence, to enable the government to perform them, there must be vested in it the power, or right, to determine what its duties are, and the times, modes and means by which they shall be performed And, while it is the duty, or function, of the government to act wisely, and with the single view to the good of the people, yet, obviously, the power to decide necessarily implies the power to decide erroneously, or even dishonestly For the question here is, as to the extent of the power with which it is necessary to vest the government, in order that it may be able to perform its functions efficiently; and when the extent of its power or right is thus determined, no act of the government within the limit of its right, can be held unlawful, however erroneous in fact, or criminal of intent, it may be.

Thus—to make use of an illustration already used—it is the function of the judge to administer justice; but his jurisdiction, or power, is "to hear and determine the subject in controversy;"[*] and this obviously implies the power, or right, to decide erroneously, and even unjustly. Hence, judgments depend for their validity, not upon their being correct, but simply upon the jurisdiction, or right of the court, to determine the cause. Hence, it has been wittily and truly said, referring to the definition of jurisdiction, "as power to hear and determine," that, "it is in truth the power to do both, or either—to hear without determining, or to determine without hearing."[†] In the same way, the validity of all the acts of government, like that of the acts of private individuals, is to be determined, not by the wisdom of the act, or by the motives of the actor, but by the single consideration whether it is within its right If so, it is valid, however mistaken or wicked it may be

The distinction between the question of *function* and the question of *right* is also illustrated by the discussion that has arisen with reference to the provision of the late Democratic platform, declaring the protective policy of the government to be unconstitutional Conflicting opinions on this point, from a Democratic point of view, may be reconciled by saying that this policy is within the right, but outside of the function of the federal government; and, therefore, that it is unconstitutional, as not being the exercise of a constitutional function; but constitutional, as being the exercise of a constitutional right.

§ 20. *Of the Essential Functions of Government*

The functions of government are necessarily determined by its nature and end, and this, again, by the principles or qualities of human nature, which give rise to the necessity of government, and which thus constitute its *raison d'être*, or the cause of its genesis and continued existence. This subject was considered in the last chapter, and it was there shown at length that this cause, or reason for the existence of government, is the tendency of men to commit injustice, and the consequent necessity of government, or organized political force, in order to secure to individuals immunity from injustice; and hence, in the language of Cousin: "Government, in principle at least, is precisely what Pascal desired—justice armed with force." Hence, the principal end of government—to use the language of the Constitution of the United States—is, "to establish justice," or, in other words, to protect the rights of individuals from aggression, either foreign or domestic And this is its sole essential end, for all other ends of society can be more or less perfectly attained without political interference (*a*) But obviously this function includes numerous others, as, for instance the function of organizing and administering a government, and of maintaining it against attacks, from without or within, and as consequent upon this the functions of taxation, judicature, legislation punishment and many others All of these are essentially necessary either directly or indirectly to the exercise of the function of maintaining justice and therefore to be admitted

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[*] R. I. vs. Mass., 12 Pet., 657-717.

[†] Bennett's Case, 44 Cal., 88.

§ 21 *Of Other Functions of the State and of the Several Theories with Reference Thereto*

Whether in addition to the maintenance of justice and the several functions therein involved—which may be called its essential functions—government has other functions is an important question, and one upon which there is much difference of opinion On the one hand, it is asserted that the functions of the State are strictly limited to the realization of right or justice, on the other, that they extend to the promotion of the happiness or welfare of the community in every way The former of these theories is variously designated as the doctrine of *laissez faire*, *laissez passer* or *laissez aller*, and has latterly I believe, by Mr Huxley, been nick named *administrative Nihilism*, the latter may be called the *utilitarian doctrine* Between these two theories, as extremes, there are several others which while according to the State more extensive functions than the former, yet assign a well defined limit to State interference Of these two may be distinguished The one regards the maintenance of justice as the essential end of government, and the performance of this function as a limitation on its other functions, without assigning any other limit The other regards it as the proper function of government also to supervise, protect, encourage and direct the natural development of man and society. The former is the practical view commonly taken by the jurists and may therefore, without impropriety, be called the *juristic* theory of political functions, the latter, from the fact that it regards the State—in the sense explained in the last chapter—as organic in its nature, has been called, though not with strict propriety, the *organic* theory of the State These several theories will be discussed in the order in which they have been named

§ 22 *Of the Laissez Faire Doctrine*

Of the first theory—the *laissez faire*, or *let alone* doctrine—the most conspicuous representative is Mr Herbert Spencer, whose works have made the subject so familiar in this country and England as to dispense with the necessity of treating it here at length (*b*) His position is thus admirably stated in one of his latest works

"Whether, *in the absence of war*, a government has, or has not anything more to do than this (*i e*, to maintain justice), it is clear that it has to do this. And by implication, it is clear that it is not permissible to do anything which hinders the doing of this." This, it will be observed, is, so far, a precise statement of what we have called the *juristic* doctrine.

"Hence, the question of limits becomes the question whether, beyond maintaining justice, the State can do anything else without transgressing justice. On consideration, we shall find that it cannot"[*]

Three arguments are urged in support of this position, which are drawn (1) from the nature of the State,[†] (2) from the imperfection of political instrumentalities,[‡] and (3) from the demoralizing influence of governmental interference on private character [§]

With the last two arguments, so far as they go, I entirely concur Thus, with regard to the last, it cannot be doubted that the progress of individuals and of society is, in the main, the product of individual energy and voluntary coöperation, and that these forces operate most efficiently in a state of liberty , nor can it be doubted that the virtues, intellectual and moral, by which this progress is effected, must necessarily be more or less deteriorated by the assumption of unnecessary functions by the government, and the consequent disuse of such functions, by individuals and voluntary associations. And this is especially manifest with regard to the capacity for private cooperation , which, in the view of the most sober and profound thinkers, must constitute the principal instrumentality in the development of civilization ; and which, it is not extravagant to hope, may, in the end, take the place of government in the performance of all but its absolutely essential functions.

With regard to the second argument—namely, the argument from the imperfection of political instrumentality—the reasoning is even more conclusive ; for, whatever view we may take of the extent of the functions of government, it is obvious that we must always consider, not *only* the legitimacy of the end, but also the efficiency of the means by which it is to be attained , and, hence, that no functions should be undertaken, except those absolutely essential, until an efficient instrumentality for its performance can be obtained. Nor is there any proposition more entirely demonstrated by historical experience than that the political agencies with which we have hitherto had to deal are utterly and entirely incompetent for the purpose, on account of the dishonesty, and, still more, the ignorance, of government officials. It is also, as we have observed, a fact of fundamental importance that the only efficient means we have of directing and controlling the government is public opinion, and especially that form of it which constitutes the positive morality of the community. Hence, it is evident, the only hope of an improvement in political organization, and in the character of political rulers, lies in an enlightened public opinion. But this, at the present time, and not less in this country than in others, is, with regard to political matters, lacking, in the highest degree, both in honesty and in knowledge. We need, therefore, as an essential condition to the enlargement of the functions of government a cultivation of political science in all its departments and until this takes place and public opinion is thereby enlightened and by this or other means an improved political organization and a moderate degree of honesty and intelligence in our public officials obtained all thought of governmental interference beyond cases of the strictest necessity should be abandoned

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[*] *Justice.* [†] *Id.*, Sec. 121 [‡] *Id*, Sec. 124, *et seq.* [§] *Id*, Sec. 135, *et seq.*

Hitherto nearly all the interferences of government with individual action beyond what were essentially necessary have been if not in their end at least in their execution altogether unjustifiable and such interferences have been and are the source of more human misery and unhappiness than almost any other cause So that in fact instead of regarding the present condition of things as being the result of a *laissez faire* policy—as is commonly asserted by those who favor an extension of the functions of the State—the opposite is true and it must be regarded largely as the result of such undue interferences by the government The advocates of the *laissez faire* doctrine may therefore justly claim that before any argument against it can be drawn from experience we must first give the policy a fair trial by divesting the government of unnecessary functions and under this view of the matter those who are opposed to governmental action beyond the demands of necessity may without shame accept the name applied to them by Huxley and with Prof Sumner regard themselves to this extent as Nihilists (c)

But just here a great and almost insurmountable difficulty presents itself the existence of which constitutes one of the most serious arguments against undue governmental interference For it is a fact as undoubted as it is unfortunate that whenever a policy is once adopted however unjust and detrimental to the public interests it may be it generates immediately a host of private interests by which it is so buttressed and defended as in general to make it almost impregnable Of this a thousand illustrations might be given but as in every case there has been developed a strong and interested public opinion the illustrations would simply have the effect of prejudicing the minds of many readers against the principle itself and will therefore be dispensed with The reader may however readily find sufficient illustration in the opinions of his political opponents

The doctrine of *laissez faire* must therefore I think with reference to the existing state of things be regarded as practically established and to those who would deny it we may say with Oxenstiern *Nescis mi fili quam parva sapientia regitur mundus* (d)

But while this doctrine as a practical maxim is for the present to be accepted this cannot be said of it as a universal theory true of the future as of the past Nor is the argument of Mr Spencer on this point at all conclusive His conclusion as we have seen is that the State cannot do anything beyond maintaining justice without transgressing justice and the argument is that in going beyond its function of maintaining justice, the State must do this, "in one, or both, of two ways, which, severally or jointly, reverse its duty."

Of these, the first consists of cases in which the State restrains "the freedom of some individuals more than is required by maintenance of the like freedom of other individuals." And these cases "are themselves breaches of the law of equal freedom" This, indeed, is obviously a legitimate application of "the law of equal freedom," but that law itself —as will be shown more fully hereafter—cannot be maintained; for there are obviously cases, as, for instance, those of minors, and persons *non compotes*, in which interference by the State, though in violation of the law of equal freedom, is not only proper, but obviously essential.

The other argument is, that taxation is itself a diminution of freedom, and, except where required for the necessities of the government, therefore unjust; and to this proposition we think there can be no reply. But the question of the extent of the legitimate necessities of the government is the very question at issue, and it cannot be assumed that they are limited merely to the essential function of maintaining justice, but, as I will attempt to show, they are more extensive Nor does the argument apply to those resources of the government which are not acquired by taxation —as, for instance, the public lands of the State, and property acquired by escheat, and also property acquired by gift: with reference to which, or at least to the last, no question can be made. This mode of acquisition by the State—*i. e.*, by gift—will, indeed, probably be regarded as insignificant, but such is by no means the case. All the immense property devised or given to public charity is, in fact, given to the State, and is ultimately subject to its disposition, and it is extremely probable that, by an encouragement of the natural disposition of men, under certain circumstances, to leave their property for public uses, or charity, this source of acquisition might be rendered enormously prolific. For, at all times, there is a certain percentage of men, who, either from feelings of duty, desire to devote their wealth, or some part of it, to the good of their fellow-men, or who have no other objects to which they desire to devote it, and I do not think it can be doubted that, if there were an efficient department of the government to take charge of such bequests, and gifts, and to devote them to the public good, either generally, or in reasonable accordance with the will of the donor, such bequests would enormously increase.

This is, in fact, shown by the great acquisitions of the Church, prior to the statutes of mortmain, and also, by the large sums that have otherwise been devoted to charities of various kinds. Hence, I regard it as probable, that a never-dying corporation like the State could, in this way, if desirable, acquire property to an almost unlimited extent, and that the disposition of men would, in this respect, have to be curbed rather than encouraged. The real difficulty is that, under existing circumstances, it could not be hoped that such resources would be wisely and efficiently administered.

§ 23. *Of the Utilitarian Doctrine.*

The Utilitarian doctrine is formulated in the proposition that the functions of government extend to the promotion of the happiness or welfare of the community generally. The proposition is a very specious one, and calculated to mislead. In effect, it consists of two propositions. (1) the Utilitarian principle generally, as the fundamental principle of Morality, and (2) the inference from it that the welfare of the community may be subserved by governmental interference, whenever deemed expedient

The general principle will be considered hereafter, and it will be shown that it is not only false, but also so indefinite as to be of no practical use as a standard of conduct But for the present—for the sake of the argument—we may accept it as true, and consider only the inference from it.

It is to be admitted that the ultimate end of the State is to promote the welfare of the community, by which is to be understood, the welfare of the individuals of the community, and of all of them But—as we have seen—this end is accomplished, not merely by the instrumentality of government, but also and chiefly by the free action of men, controlled and modified by the natural influences of society upon them ; and hence, the action of government is but one of the means by which the ultimate end of the State is to be accomplished. And it is equally clear, with regard to the governmental functions of the State, that the fundamental rule, by which their exercise should be determined, is that justice is to be observed, for this, of all conditions, is most imperatively demanded by a just regard to the welfare of the State, and of all its members Hence, the real questions involved are, not as to the ultimate end of the State, or of the government—as the theory would seem to imply—but (1) whether there should be governmental interference with natural processes operating efficiently, or, in other words, with the automatic functions of the State, and (2) whether the welfare of the community can ever be subserved by violating justice.

To both of these questions, the answer is clear

The most obvious dictates of the principle of Utility, as of all other theories of justice, demand: (1) that there should be no unnecessary governmental interference with the liberty or free action of men, either individually or in the aggregate, and, consequently, the development and conduct of the State, as well as of the individual, should be left, as far as practicable, to the operation of natural causes; and (2) that the observance of justice is the fundamental condition of social well being, and its violation always pernicious.

Accepting these qualifications, the theory becomes identical with the *juristic theory*, next to be considered. But, in fact, these qualifications are ignored by the Utilitarians; the vice of whose system is in ignoring, and, in effect, even in denying the existence of justice.

§ 24. *Of the Juristic Doctrine.*

We come next to what we have called the *juristic theory* of the functions of the government; which is, that the maintenance of right or justice is an essential function of government, and its performance, a limitation on its other functions, in other words, that it is not permissible for the government to do anything that is inconsistent with justice.

More specially, the principle, and the grounds upon which it rests, may be stated in the following three propositions

(1) There is always a presumption in favor of liberty, which rests upon the principle that the healthy development, and consequent welfare of man, considered either individually or collectively as a State, can, in general, be secured only by leaving his development to natural processes, and hence that in every particular case, the presumption is against governmental interference, and the burden ot proof upon him who asserts its propriety.

(2) In order to secure the liberty or freedom of action essential to the healthy development and well-being of man, the State must interfere by governmental action, so far as may be necessary for the purpose; and hence, it is the essential function of government to maintain justice.

(3) It follows, as a corollary of the last proposition, that the performance of the function of maintaining justice (which constitutes the *raison d'être* of government, and the condition of its existence), is a limitation on its other functions; and that no other function can be admitted that is inconsistent with this.

§ 25. *Of the Organic Theory of the Functions of Government.*

These propositions, however, do not establish the negative proposition of Spencer and others, that the functions of the State do not extend beyond the function of maintaining justice, and it remains, therefore, to consider the affirmative of this proposition

On this point, as we have said, it cannot be denied that the ultimate end of the State is the welfare or well being of the individuals—including future generations—that compose it. But this end can be effected only by means of society—which is as essential to the welfare of each individual as food or raiment or shelter—and, in general, only by the perfect freedom of its action. The government may, indeed, with the resources of the State, assist this or that individual or class of individuals, and thus add to the fortunes and perhaps to the happiness of such individual or class; but, as all its rights are held in trust for, and in fact belong to the whole community, it cannot legitimately or justly do this, except to the extent that the interests or the obligations of the whole community may require it. Hence, it may be said that the ultimate end of government is merely to maintain the healthy existence and development of society.

To this end, as we have seen, it is an essential condition that justice should be observed; but justice itself is perhaps but a corollary from a higher principle; namely, that the *summum bonum*, or greatest good of man, is the perfect and harmonious development and exercise of his faculties; and that his nature is such that the principal instrumentality of such development must consist in individual liberty, operating freely under the natural and fructifying influences of society From which it must be inferred that justice—which is but the maintenance of the rights or just liberty of the individual—demands that the largest liberty should be accorded to him that is compatible with the highest development of all, and no more (*e*)

Hence we may say that justice though the immediate and direct end of the State, is but subsidiary and subordinate to its ultimate end, which is the maintenance and healthy development of society, in its highest form (*f*)

The genesis of society, as of the individual is natural and spontaneous Men naturally and inevitably place themselves or are placed, in social groups such as the family, the village, town, or city or neighborhood, and in many other kinds of associations whether incorporated or otherwise, such as churches, schools colleges, and associations for friendship, charity, business and other purposes and finally in the State and in the world community of civilized nations to which is to be added that great society of the living and the dead of which literature makes us members By the influence of those associations the manners, beliefs, tastes aspirations ideals, and ambitions and consequently the character, career and fortunes of the individual are to a large extent determined So that it may be said, without much exaggeration that the modern man is almost wholly the product of the social influences to which he has been subjected, and that it is these alone that have differentiated him from the primitive savage

The development of the society which we call the State, like that of the individual, is also in the main spontaneous being determined by the resultant of the characters of its individual members, and subordinate social groups, by the influence of other States, and by its own history If we regard it (as, for the sake of illustration we may—though such analogies are dangerous) as a body politic or fictitious or imaginary person, it may be said that its growth, like that of the individual man, is natural and organic, and that undue interference with its natural development must result in death or disease, and hence in general, the function of government is merely to protect it from interference by force or fraud

But the State, like the individual, is subject to evil influences, intellectual, moral, and physical, by which its opinions are vitiated its morality corrupted, and its health deteriorated, among which often the most serious is the evil influence of its own government The result is, that it often loses the capacity for healthful development, either wholly—as in the later Roman Empire, and in Turkey, China, India and Asiatic countries generally—or partially—as is generally more or less the case with ourselves and other European peoples Here, then, it seems to be an obvious function of government, not only to remove the evil influences which have caused the disease, but also, if possible, to cure the disease itself, by directing and encouraging the social progress, nor does it seem less apparent that it is also its function to check in the beginning any tendency to evil, before the consequences have become disastrous Hence, we may conclude that it is the function of government to supervise the development of society, check its evil tendencies, and when necessary—though the performance of the function is a delicate one—to direct and encourage its healthy progress. For the exercise of this function is not merely for the benefit of this or that individual or class, but is essential to the welfare of every individual of the community. But it is to be understood that this function does not extend to the interference with the development of society, or of the individual, unless demanded by necessity, that is to say, the government should interfere only so far as absolutely essential to its healthful existence and development. (*g*)

§ 26. *Illustrations of This Principle.*'

The application of the above principles may be illustrated by reference to the numerous familiar cases of State interference, which have of late years been so warmly discussed, such as public education, the encouragement of literature and the arts, the supervision of the public morality, the regulation of railroad corporations and of monopolies generally, and public improvements, etc, to some of which we will briefly refer. All of these, it will be seen, may in theory be justified by the principles we have laid down; but it will also be seen that these principles are in general violated in the practical exercise of the governmental function

With regard to education, it cannot be doubted that, to a certain extent, and for specific purposes, it comes within the function of the government. This is clear enough with reference to the education of military and naval officers, and also that of soldiers and sailors generally. Hence, the fishery bounties allowed by the United States Government were, at one time, a legitimate exercise of governmental power, as tending to produce a supply of seamen for the navy in time of war And on the same ground, the money expended by the United States Government for the encouragement and education of militia organizations is an equally legitimate expenditure And the same principle might perhaps with advantage be applied, as in France, to the education of young men with a view of providing material for the civil service. Indeed, with regard to one branch of the civil service, the exercise of this function by the government of the United States is imperatively demanded by the necessities of our situation—namely, the diplomatic service—the efficiency of which is such as frequently to put us in a humiliating condition in our intercourse with foreign nations, and is likely, at any time, to involve us in great difficulties and dangers.

Another case where government interference is demanded is for the education of lawyers. So far as the lawyers themselves are concerned, they seem to get along very well with the imperfect education of the present day; and it may be said that often a thorough and scientific knowledge of the law may operate to their disadvantage by putting them out of touch with their professional brethren and the judges, but, unquestionably, the interests not only of litigants, but of society generally are injuriously affected by the lack of such education So that with regard to the former, it may not be extravagant to say that the license of the average lawyer is to be likened, as it were, to a letter of mark, authorizing him to prey upon mankind And with regard to society it cannot be doubted that the efficient administration of justice, for which thoroughly educated jurists are required, is essential to the preservation of the positive morality of the people, which is in fact the life of civilization, and that the inefficient performance of the judicial functions is of all other causes of demoralization the strongest and most irresistible

On the same grounds, also it is evident that it is a legitimate function of the government to encourage education in political science, for this branch of literature is so unremunerative, that, without such encouragement it must continue to be, as it has been, neglected So, too, with regard to citizens generally it is necessary and therefore legitimate for the government, by the judicious supervision of education, and, when necessary by affirmative help to provide for their education in such points as may be necessary to fit them for their political functions, and this includes, undoubtedly, as an essential condition instruction at least in the primary branches of education But beyond this and perhaps some similar cases that I have overlooked, no satisfactory grounds can be assigned for the further extension of the functions of the government in this direction and it is therefore difficult to conceive of any principle upon which to justify the American theory of public education, which aims to absorb the whole of education and whose object is conceived to be the good of the individual student

The same considerations apply to the encouragement of literature, which it is the legitimate function of the State to encourage so far as necessity may demand, as is the case with reference to political and moral science and also philosophy generally For in this branch of literature even if we may count upon a few high spirits, who, at the sacrifice of their worldly interests, may devote themselves to it we cannot count upon their finding readers or sufficient remuneration for their services to keep them alive But this object is not at all effected by the copyright laws, whose effect is rather to submerge the productions of solid thought under a flood of shallow and unprofitable matter, which, in the mass cannot be said to conduce in any way to the welfare of society In this, I am no doubt singular, for even Mr Spencer, and other administrative nihilists, justify this policy, not, indeed, on the ground of its being conducive to the interests of society, but on the principle of the author's supposed right of property in his work—a principle which, it seems to me is altogether without justification For the supposed right, as has been uniformly held by our courts, has no analogy whatever to the right of property, and cannot be regarded in any other light than that of a mere monopoly

So, with regard to public libraries, it cannot be doubted that they can be made one of the most efficient means of educating the people, but as conducted, they serve only for their amusement, and are therefore illegitimate. The remedy, however, is very simple, it is rigidly to exclude all books except such as may serve for instruction; or, to adopt a rough criterion, to exclude, with some extremely limited exceptions, all novels and light literature. This would reduce the cost of administration perhaps tenfold, and would make it practicable to secure a fair collection of solid works. In these observations, I, of course, do not refer to the great public libraries of the world, whose main object is to preserve literature.

The same observation is true, also, with regard to patent rights, the effect of which, instead of being conducive to the welfare of society, has been to divert the genius of men to matters merely material, to the exclusion of the higher thought which the moral and intellectual progress of mankind demands. Hence, though I do not doubt it is the function of the State in certain cases to encourage inventions, I am far from the opinion that the exercise of this function in the manner in which it has been exercised has been judicious.

The functions of the government also undoubtedly extend to the protection, and, in proper cases, to the encouragement of the positive or received morality of the people; in which, it cannot be too often said, the life of the community consists, and which is but another name for its civilization For no fact appears more manifestly on the pages of history than that civilization progesses only when the political morality of the people, to which private morality is essential, is in a healthy state, and that with the degeneracy of its morality the national life becomes extinct This is illustrated by the communities of Greece, and by the Roman republic, and by all countries of which we have had any account, and it may be taken, empirically, as a law of human development

The mode in which this function shall be performed is another question. Generally, the true policy is non interference, but where a tendency to demoralization manifests itself, it is the function of government to remove it; nor do I doubt that in proper cases it is equally its function to encourage virtuous action, and especially virtuous political action, in its citizens. But as to the practical exercise of the function, it must be confessed that the most formidable source of demoralization has been the example set by the dishonesty of public officials, and by the government itself when acting under the pressure of depraved popular opinion ("*Civium ardor prava jubentium*").

With regard to railroad corporations, and other transportation companies, in view of their enormous and resistless influence over the rights and interests of citizens, it cannot be doubted that it is a function of the government to regulate their charges and mode of operation; and such, accordingly, is the doctrine of our courts. And if no means of regulating them can be devised, and no other mode can be suggested, it is even true that the rights of the community would require the government itself to own, and to operate them : and the same principle would apply to all monopolies It must also be regarded as a function of the government to encourage the construction of highways and streets so far as essential to the comfortable life and healthful development of society ; as, for instance, in the case of cities, which it is obvious could not exist without the exercise of this function. But it must also be confessed that the exercise of this function has not hitherto been unexceptionable

Nor can it be doubted, to add one more illustration, that the functions of the government extend, under proper conditions, to the coinage of money and to fixing the value of the coins and making the same legal tender, and also to the issue of paper money, and the general supervision of the currency Indeed, the necessity for the exercise of these functions is so apparent that it is never denied, except by those who have profited by some previous action of the government in that regard (generally illegitimate), and who, therefore, naturally desire to be left alone But there is perhaps no function of the government of which history presents more numerous instances of its illegitimate exercise than this. It will be sufficient, however, to illustrate the subject by a brief reference to our monetary history during and since the civil war

The issue of greenbacks during the war and making the same legal tender for past debts, was, in fact, a violation of the terms of such contracts For, in all cases of contracts to pay money where no particular kind of money is specified, it is always a condition, expressed or implied, that the payment shall be made in the money current at the time of the contract. Hence, this legislation was in effect *pro tanto* a confiscation of the property of the creditor.

On the same principle, in all contracts to pay money made subsequent to the passage of the act, where no particular kind of money was specified, the debt was payable in greenbacks, or any other legal currency at the option of the debtor. But it is obvious that wherever the value of money changes, either the creditor or the debtor is injured, or, if the change be by the voluntary act of the government, defrauded , and hence that to *appreciate*, is as unjust and immoral as to *depreciate* the currency ; and nothing, therefore, can be more obvious than that it is the duty of the government, so far as in its power lays, to prevent all fluctuations in the value of money. Thus at the end of the war when legal tenders were at a low ebb, their value was, of course, increased by the large demand made by the entrance of the South again into the financial system of the country—greatly to the damage of the debtor class whose debts were thus in fact increased , but the damage was the result of circumstances which the government could not control, and hence was *damnum absque injuria* But the subsequent legislation of the government, avowedly designed gradually to appreciate the value of its paper money and finally to redeem it in coin, was in violation of all principles of justice, and in effect constituted the levy of a subsidy of about fifty per cent. on the average of the total private indebtedness of the country during the period of the appreciation of the greenbacks—amounting to billions of dollars.

This legislation was justified upon the ground that the government had contracted to pay the face value of its notes, and that justice required that this obligation should be fulfilled But, even if the performance of this obligation could not have been deferred, it may be said, paradoxical as the proposition may appear, that it was unjust for the government to perform it, at least in the manner that it was performed For the green back was not merely a contract of the government; it was also the money of the country, and could not be appreciated in value in any way without levying an unjust subsidy upon all the private indebtedness of the country, so that, in fact, the government could not pay its notes in specie, without also compelling the unjust payment of ten or twenty times the amount by private parties And it may be safely said that, where the government can only pay its debts by taxing, to a tenfold, or twentyfold amount, other parties equity forbids it to pay. But, in this case, the action of the government was entirely gratuitous, for it could, without violating the contract, have delayed the payment, or, even if it had repudiated its contract by paying only the actual value of the currency, it could afterwards have compensated the parties injured The effect of this policy, so highly lauded, and pointed to with pride by many, was to transfer, unjustly, from the debtor to the creditor class many billions of dollars.

Another effect, less important, but still monstrous in proportion, was to double the bonded indebtedness of the United States. And this was aggravated first, by the legislation making the bonds payable in coin, and then by the demonetization of silver—thus largely appreciating the value of gold, and making them payable in that metal

These conclusions, indeed, are warmly disputed, and those who affirm them are characterized as cranks, or as debtors aiming to defraud their creditors, but in the main, the principles upon which they rest are not contested by competent writers upon financial subjects, whether bi metallist or mono-metallist; and they are too obvious to be intelligently disputed.

I touch here, contrary to my custom, upon matters of current politics, and it is not be expected that what is said will be dispassionately considered; but a few words on the other side of the question may perhaps tend to set me right with some of my readers. It is proposed now to reform the currency by remonetizing silver at a ratio of 16 to 1. That the demonetization of silver was one of the most disastrous mistakes that has ever been made, I do not doubt; nor do I pretend to deny that I am in favor of its remonetization; but I readily perceive that to do this without injustice is a difficult task. The principle underlying the whole subject is the one already referred to—that a change in the value of the currency is an injury, and generally a robbery, either to the creditor or the debtor. The issue of legal tender greenbacks, and their final redemption, by means of the demonetization of silver, in gold coin, was a palpable robbery equally of the debtor and of the government. But, as we have for years been in effect upon a gold basis and as payment in gold is therefore either expressly or impliedly one of the terms of every contract for the payment of money the remonetization of silver it may well be claimed would be a robbery of the creditor and therefore unless accompanied with other provisions of the law obviating injustice an illegitimate exercise of governmental functions Hence to prevent injustice from the resumption of the free coinage of silver at the old ratio it would be necessary for the government to redeem all outstanding currency gold silver and paper at its value in gold and for the law to provide for the payment of all existing debts public and private in gold coin To the justice of this course neither party could make just objection not the gold men for contracts would be paid according their tenor nor the silver men for it is claimed by them and I think justly that gold would be depreciated This would be a great but not impracticable undertaking and perhaps in view of the disastrous effects of the demonetization of silver and of the absolute necessity of a remedy it might be also advisable (*h*)

NOTES

(*a*) Man born in a family is compelled to maintain society from necessity from mutual inclination and from habit The same creature in his further progress is engaged to establish political society in order to administer justice without which there can be no peace among them nor safety nor mutual intercourse We are therefore to look upon all the vast apparatus of our government as having ultimately no other object or purpose but the distribution of justice or in other words the support of the twelve judges Kings and parliaments fleets and armies officers of the court and revenue ambassadors ministers and privy counselors are all subordinate in their end to this part of administration (Hume s *Essays*)

(*b*) The origin of this the *laissez aller* theory is ascribed by Mr Ahrens to Kant to whom he thinks the reaction from the theory of Wolf is due Thenceforth he says the State was conceived as an institution *not for eternal* or temporal salvation but *for right* guaranteeing to all liberty and nothing but liberty which each was to use consistently with the liberty of all and according to the moral views freely formed in his own conscience The theory of Kant upon the end *of the* State thus conducted *to the first* conception of the State as an institution or *State of right* (*état de droit rechts staat*) which England has in great part realized in practice which Adam Smith with whom Kant has been paralleled has established from the point of view of the liberty of labor and which the United States have realized still more completely in all their Constitution Nevertheless the theory of Kant went beyond all reality For even the United States where the particular States take so great a care of public instruction have not gone so far in the limitation of the action of the State The theory of Kant did not respond sufficiently to practical exigencies and it was also recognized from the philosophic point of view as an exclusive abstract theory leaving out of view all the ends of man with which right ought to be put in relation To remedy this great defect attempts were made to combine the two opposed theories of right and of happiness or rather of the common good by presenting right as the primary or direct immediate end and the common good on the contrary as the secondary or indirect end yet without determining precisely the relation of the one as the mean with the other as the final end (*Cours de Droit Naturel* Sec 106)

(*c*) I quote Prof Sumner from memory The fact is there has never in any modern government been even an approximation to the *laissez faire* doctrine and no argument against it can, therefore, be drawn from experience The suffering and oppression among operatives is generally cited as an illustration of the unsatisfactory workings of the doctrine. But in reality they are the victims of power in a large measure created by artificial political arrangements. To bring the State under the full operation of the doctrine, it would be necessary *to* repudiate, or at least to essentially modify, the existing policy of the State with reference to the following subjects, viz., contracts, and especially contracts for the payment of interest, patent and copyright laws, corporations, taxation and other subjects

Thus, with regard to usury, or interest, there is an almost universal consensus of opinion in favor of allowing it, and I do not mean to say either that I am, or that I am not, of a different opinion , but certainly the arguments which have been advanced in its support, and which have served to convince the world, are very far from being satisfactory.

The celebrated argument of Bentham, which is regarded as having settled the question, is even childish in its simplicity Briefly, it is "that no man of ripe years and of sound mind, acting freely and with his eyes open, ought to be hindered, with a view to his advantage, from making such bargains in the way of obtaining money as he thinks fit"

And he adds·

"Were it any individual antagonist I had to deal with, my part would be a smooth and easy one 'You who fetter contracts, you who lay restraints on the liberty of man, it is for you, I should say, to assign a reason for your doing so' That contracts in general ought to be observed is a rule no man was ever yet found wrong headed enough to deny," etc (*Defence of Usury*, Introduction)

But obviously Bentham here mistakes the issue, and it is he who is arguing in restraint of liberty ; for his thesis is, not that men ought to be permitted to agree to pay interests, but that the State ought to compel him to do so , and he in fact assumes as his first principle that all contracts should be enforced But, as observed elsewhere, there is no such principle—taking the proposition universally—known to the law, or to right (*v infra*, pp 140, 141), and the question presented in this and all other cases of contract is whether the force of the State ought to be used

With regard to taxation, omitting the other subjects referred to, the power of taxing, both as to amount and as to kind of *taxation*, is unlimited, and *the power* is used, not simply for the purpose of providing for the necessary expenses of the government—its only legitimate object—but for the purpose of so-called protection and other equally illegitimate purposes , and it is impossible to calculate what effect this has had upon the inequalities of condition in the body politic

(*d*) We quote this from Mr Coleridge, who uses it to emphasize his own experience of "the extreme shallowness and ignorance with which men, of some note, too, were able, after a certain fashion, to carry on the government of independent departments of the empire" (*Table Talk*, London, George Routledge & Sons, p. 194)

(*e*) *This is well expressed by Amos* "*The* generic expression which denotes, *for* any given age or country, the exact measure of personal liberty for every man, which supplies the most favorable conditions for the highest possible development of all, is rights" (*The Science of Law*, p. 91). And this seems to agree with the view of Krause, or rather of his Spanish translator, Sanz del Rio "Right requires that all men shall give and receive mutually and in social form, every condition necessary for the fulfillment of their destiny, individual and social." "The idea of right . looks to the totality of human ends, and the conditionality thus imposed on man as itself an end" (*Ideal de la Humanidad*, p. 48).

(*f*) Mr. Ahrens, in reviewing the principal theories as to the end of the State, distributes them into three *grand categories*, the names *of* which—*for* lack of ability to translate them satisfactorily to myself—I give in the original, namely, "la théorie d'unité, les theories partielles, et la doctrine harmonique."

The first theory is that which confounds the end of the State (by which it will be understood Mr. Ahrens means the organised State, or government, or the political order) with the end of the social order in general, or, as I would say, which confounds the end of the government with that of the State

The second category comprehends the several theories, which assign to the State one, or several, particular ends. This class includes numerous and inconsistent theories as, for instance, that of Aristotle, who, with Cicero and Grotius, distinguished "a direct end of the State, consisting in the maintenance of justice, and an indirect end, consisting in happiness or well-being," it includes also the theory of Thomasius and Kant, who make a radical distinction between Right and Morality, and assign the first as the sole end of the State—holding that the State should not otherwise concern itself with the happiness of its members, but should leave it to the free choice of each to seek his own happiness, and also, the doctrine of Leibnitz, who regards the end of the State to be the *perfectionment* of society, and that of Wolf, who regards it as happiness or felicity, or the common welfare and safety, and finally also that of Hegel, which may be regarded "as the culminating point of the modern movement which commences by presenting the State as the pivot of social order, and ends, not only by absorbing, in the ancient way, everything in it, but also, by conceiving the State itself as the absolute end, as the manifestation of the Divinity, or, as the 'present God'" (or, as Hobbes says, "the Mortal God"), an apotheosis by which the just relations of the State, as a means, with the culture of all that is divine and human, are completely inverted.

"The third category consists of the doctrines which seek the *organic* and harmonic relations of the State (*i. e*, the government), and its end, with the order, and the end of human society Apart from certain feeble essays attempted by others, there is only the doctrine of Krause by which these organic relations can receive a precise definition in conformity with all the tendencies, at once, of liberty and of humanity, in our epoch" (*Cours de Droit Naturel*, § 106, Du But, *De l'Etat*)

This doctrine forms the basis of Mr Ahren's own exposition, which is set forth in the following section (Du But, *De l'Etat au Point de Vue Ideal*), and more generally in the first part of the work in § 5, and which will be again reverted to

(*g*) The views in the text seem to agree, at least in the conclusion reached, with those of Mr Ahrens

"When we speak of right," he says, "as the fundamental end of the State, and thus concede the State as being by its essence *l'etat de droit* (*rechts staat*), we must remember that right has not its ultimate end in itself, but in human culture, it follows, then, that we must assign to the State a double end, an immediate, direct end, that of right, and an end indirect, but final, consisting in the social culture This distinction is explained by several authors, but none of them with the exception of Krause, has made clear the intimate and necessary relation existing between right as the direct end, and all culture as the final end"

But the author explains, at length, that this function consists "in regulating or ordering the relations of life and of culture, without intervening in the causes and productive forces which are situated outside of its domain and its action,' and "in realizing, for all the spheres of life the conditions of their existence and their development" "Intellectual, moral, religious, economical causes," he says, "are the primary powers, the immediate sources of life, and the powers of the State can consist only in keeping open the sources of life, from which flow, by the free and proper impulsion of all the forces, individual and social, the good influences which form the ever increasing aliment of social life" (*Cours de Droit Naturel*, pp. 331, *et seq*)

I am unacquainted with Krause's views, with which Mr Ahrens expresses his agreement, except at second hand As well as I can make out, his theory seems to be, that the end of government is simply the maintenance of right or justice, but the sentiment of right is regarded by him, "not as a sentiment of individuality," but as "the sentiment of a common and reciprocal relation" which demands "that all men should give and receive mutually every condition for the fulfillment of their destiny, individual and aggregate" (*Ideal de la Humanidad*, Sec. 17). The difference between this, and the narrower view of justice, may be illustrated by the two forms of the familiar maxim, viz. "Do unto others what you would have others do to you," and. "Do not to others what you would not have others do to you."

Hence, "the State, as the exterior form of justice, ought to assure to its citizens all the conditions necessary for accomplishing freely the totality of their destiny, but the interior conditions of liberty and moral merit, the internal operations of the mind, and the superior powers of the understanding and the will are outside of its sphere, and above its means. In these particulars, the State can only give the exterior conditions thus giving legitimacy (*derecho*) to the activity of other institutions relating to the destiny of humanity, but the State can neither found nor direct the interior life of these institutions" (*Id*, Sec 25)

We add, for the purpose of more fully explaining and illustrating the organic theory of the State, the following observations of Mr Ahrens, whose views we have already so largely noted ·

"No organism can exist and be developed without a certain equilibrium between all its parts In the physical organism it is maintained by natural laws In the ethical and free organism of the State it ought to be preserved by rational laws formulated and executed according to the free fluctuations of the social life of the State To maintain to a certain degree, the equilibrium, the proportion, the harmony between the different branches of the social work of culture, above all to arrest evident deviations and protuberances, this is the important function that the State ought to fulfill, both by general laws regulating better the relations between the different parts, and by affirmative aids, which it can distribute, according to the rules of a just proportion

"It is this action of organic relation established first in general in the three organic functions of right which we have yet to determine more in detail. .

"(1) The first principle which ought to guide the State in its activity is to recognize the probable nature, the independence, the autonomy of all the spheres of life, pursuing ends distinct from the juridical and from the political end We have already sufficiently observed that these principles are to receive consecration by the practice of self government applicable to all the spheres and to all the degrees of human society

"(2) The second principal function of the State admitted by all theorists, is of the negative and restrictive nature It consists in removing in the domain left free to the operation of *laissez faire, laisser passer*, those obstacles which are too great to be overcome by individual forces, in imposing upon the liberty of each the limits necessary for the existence of the liberty of all, and in submitting for the maintenance of eternal peace, all controversies to the tribunals. It is to this function, without doubt, very important, that a theory, the expression of an extreme tendency, has wished to reduce the end of the State It is, as we have seen, the exclusive, abstract form of the theory which considers the State as the order of right (*l'ordre du droit*), isolating it from all the ends of culture, an opinion practiced largely in England, systematized by Kant, and carried to excess by the English positivism of Buckle .

"(3) There is then a third function assigned to the State by its end, and consisting in favoring, directly and positively, the social development. All modern theorists who have elevated themselves above the narrow point of view of the doctrine of *laissez-aller* are in accord upon this fundamental principle, but none of them have undertaken to determine the mode or the manner in which the State ought to favor the social culture." "We will cite only," continues Mr Ahrens in a note, "some eminent writers outside of Germany Mr J. S. Mill says that the intervention of the State ought to be admitted only in cases of imperious utility Mr Ch de Remusat says · 'Whenever the question is doubtful, whenever imperious antecedents, or a necessity generally felt, does not take away the faculty of choosing between the coercive system (the action of the State), and the voluntary system (self-government), do not hesitate to reject the power and trust yourselves to liberty.' Mr Ed Laboulaye says. "The end of the State is the protection of the moral and the material interests of all its citizens The maintenance of the State is then the first guaranty of liberty To give the State the highest degree of power, it is necessary to charge it only with that which it ought to do necessarily Otherwise it is to employ the force of all to paralyze the energy of each.' Mr. L. Bland (*l'Etat et la Commune*, 1846) says: 'Whenever the intervention of the State is in opposition to the free development of the human faculties, it is an evil; but whenever it aids in that development, or removes an opposing obstacle, it is a good.' Nevertheless these principles of necessity and of affirmative aid, demand to be more precisely formulated.

"Undoubtedly liberty, as we have not ceased to show, is the first source of light, and liberalism is right in putting itself on guard against all the measures of safety proposed by the government, in examining scrupulously whether the good which it designs by its general means does not weaken the first sources of action and personal responsibility, it is true also that an important mission of government, even at the present time, consists in repairing the evil and injustice which the governments in the past have done or allowed to be done, in removing the obstacles by which the social movement has been obstructed in all directions.

"In modern times it is in France that liberty has been most profoundly examined in its source, its practical applications and its relations with the action of the State, by the eminent writers cited above, and the existing regime (the imperial) will have had at least the effect of having effected a double moral reaction of the French genius" (*Cours de Droit Naturel*, pp 833, *et seq*).

(*h*) That the demonetization of silver, and the consequent appreciation of gold, or what is the same thing the resulting fall of prices, is the main factor in producing the existing financial depression, and that, from the same cause, there still remains in store for us a great aggravation of existing evils, is a proposition warmly disputed, but in favor of which the argument seems conclusive The experience of a few years will, however, definitely determine the question, and while I believe the result will be as above stated, I will be glad to find myself mistaken.

CHAPTER III.

OF THE SEVERAL FUNCTIONS OF GOVERNMENT.

§ 27. *Of the Function of Organization and That of Administration.*

The ordinary functions of government, or, as they may be called, the functions of the government, are to be distinguished from the extraordinary function, necessarily vested in every State, of organizing a government. The latter may be called the function of political organization, the former, the function of political administration—using the term in its wider sense, as including the administration of justice. This will be first considered

§ 28. *Of the Sovereign and Subordinate Functions of the Government.*

The functions of the government are either sovereign or subordinate—the former being those exercised by sovereign officers or departments, which may be defined as officers or departments having no superior in the government; the latter, those exercised by inferior officials.

§ 29. *Of the Received Classification of the Functions of the Government.*

The *sovereign* functions of the government are commonly classified as being legislative, executive, and judicial—a division suggested by Aristotle (*a*), and afterwards more fully expounded by Montesquieu (*b*), from whom it has passed into common use It was especially familiar to the founders of our government, and is thus the source of the provisions in the American Constitutions, State and Federal, vesting these several powers in three coördinate departments, known as the *Legislative*, the *Executive*, and the *Judicial*, respectively (*c*)

But this division of the functions of the government—though founded upon a real and essential difference of nature, and, as practically adopted in the several American Constitutions, constituting a great step in advance in political organization—lacks scientific accuracy in several particulars; and of the terms used to denote the several kinds of functions, two, viz., "*legislative*" and "*executive*" are inappropriate and misleading

§ 30. *Of the So-called Executive Functions.*

Thus, there are included under the term, "*executive functions*," two classes of functions essentially different in their nature, namely, first, the functions belonging to the *Chief Executive*, whether king, president, governor, protector, or of other name, and, secondly, *executive functions*, properly so called, which consist in executing the enactments of the Legislature, the judgments of the courts, and the commands of the Chief

Executive This class of functions are subordinate in their nature and have no place in a division of the sovereign functions and corresponding rights or powers of the State and hence the term *executive functions* is to be understood as denoting merely the functions of the chief executive But in this sense the term is inappropriate and involves a grave error for its use in this connection is founded upon the erroneous notion that the functions of the king president or other chief executive consist merely in executing the enactments or expressed will of the legislative department which is not true (*d*) For while it is the function of the head of the State to see that the legislative will when not *ultra vires* is carried out and also the judgments of the courts, when within their jurisdiction these are not his only functions but he is vested with others which are independent of the other departments On this account it has been suggested by eminent publicists that these independent functions should be distinguished by some appropriate term and for this purpose several terms have been suggested as for instance by Blackstone the *Royal Prerogative* by German writers the *Inspective or Supervisorial Power* by Clement Tonnerre and B Constant the *Royal Power* by Bluntschli the *Imperial Power* (*Imperium*) and by Ahrens the *Governmental Power* (*e*) Of these the last is justified by the usage according to which in England the ministry is called the government, and in America the title of Governor applied to the chief executive of the State It also if we have regard to the original sense of the term agrees precisely with the term *royal power* suggested by M Constant though for the latter the term *regal power* the *potestas rectoria* of Kant or still better the *Imperial Power* might perhaps be advantageously substituted Thus understood all these terms well express the nature of the power in question but as the term *royal* or *regal* or *imperial* carries with it an unpleasant sound to republican ears, it will be better to adopt the term suggested by Mr Ahrens and to call the function in question *governmental*, the term to be regarded not as the name of a *fourth* function but as the true name of what is erroneously called the *executive function* and to be substituted for that term

§ 81 *Of the So called Legislative Function and Herein of Judicial Legislation or Legislative Jurisdiction*

The term *legislative function* is even more unfortunate For legislation is one of the modes in which the judicial function is exercised and the function of legislation is to this extent judicial For the judicial function consists in the function of determining controversies between men or classes of men as to their mutual rights and obligations and obviously may be exercised in two ways —namely the one by determining controversies between individuals that are submitted to the courts or in other words in the exercise of jurisdiction in the narrow sense of that term used by the lawyers, the other by establishing general rules for determining in advance classes of controversies that may be antici pated to arise. The latter is as essentially an exercise of the judicial function as the former, the only difference being that, in the one case, single controversies, in the other, classes of controversies are determined. The exercise of the latter function is, therefore, neither exclusively *legislative* nor exclusively *judicial*, and can be described in no other way than by calling it the function of *judicial legislation* or *legislative jurisdiction* (*f*)

Obviously such judicial legislation is to be essentially distinguished from legislation that relates to the administration of the government in other than judicial matters; such, for instance, as legislation for the support of the government and its defense from external and from internal aggression, for the administration of its finances and other property, for regulating the election and the duties of officers, and for education, the support of the poor, and other such matters; which may with propriety be termed *administrative* legislation, for, with regard to the latter, the government is vested with the function, and the right, within certain limits, of adopting any means which it may deem most conducive to the efficient administration of government, and the maxim applies, "*Voluntas stet pro ratione,*" but with regard to the former, it performs, in effect, the function of a judge, and should be governed solely by the consideration of what is just and equal between men Or, in other words, the object of *administrative* legislation extends, within appropriate limits, to the promotion of the welfare of the people generally; while that of *judicial* legislation extends only to the promotion of their welfare in a particular way, viz, by causing justice to be observed, and in the exercise of this function the maxim, "*Judicis est jus dicere non dare,*" is equally applicable to the legislator as to the ordinary judge. Thus, for instance, a law declaring that, in each of the class of cases determined by its provisions, an obligation shall arise to transfer property, or to render services to another, is obviously a declaration of the judgment, and not merely of the will, of the legislator, or, in other words, is an exercise of the judicial function, and, on the other hand, if there be no pretense of natural obligation, corresponding to the burden thus imposed, the law would be essentially unjust, and, therefore, not a legitimate exercise either of the *judicial* or of the *legislative* function, and it would also be in conflict with the Constitutional provision that no man shall be deprived of life, liberty, or property, except by due process of law. Hence it cannot be doubted that the function of *judicial legislation* is essentially identical with that of jurisdiction in the ordinary sense, and that, whether called upon to determine particular controversies presented for decision, or to determine classes of cases, in advance, by establishing rules for their decision, the function of the State is simply that of a judge, or umpire, and that justice constitutes the only admissible principle of decision. For it would be a monstrous proposition to assert that it is the function of government to establish, in the comparatively few cases that are presented to it for decision, a set of principles different from those principles of justice by which honest men, and indeed men in general, hold themselves to be bound, and by which, in the great majority of cases, their mutual claims and demands upon each other are habitually and voluntarily regulated by themselves

§ 32. *Another Division of the Functions of Government.*

We will, therefore, for the purpose of marking this distinction, regard the function of *judicial* legislation, or *legislative jurisdiction*, as part of the judicial function, and the function of legislation as including only that of *administrative* legislation. Our divisions of the functions of government will then stand thus, viz : (1) The governmental, or so called executive function ; (2) the legislative function, including only that of administrative legislation : and (3) the judicial function, including that of legislative jurisdiction.

§ 33. *Of the Twofold Division of the Function of Government.*

But even this, perhaps, may be improved For, if attentively considered, the *legislative*, seems to belong properly to the *administrative* function , of which the two special functions, namely, the legislative and the governmental, appear to be merely different modes of exercising the same general function, rather than as themselves being essentially distinct. For, precisely as, in individual life, the conduct of men, in matters not governed by moral considerations, is directed partly by general rules founded on experience, and partly by particular judgments formed upon the occasion as it presents itself, so the State, in matters non-judicial, will find it necessary sometimes to govern its conduct by general rules or laws, and sometimes by the suggestions of the particular occasion , but in both cases, the end in view, and the corresponding function, is the same, namely, the efficient administration of its affairs. It is indeed obviously expedient that the administrative functions should be divided into the *legislative* and *governmental ;* but the ends of both are the same, namely, to administer the *non-judicial* affairs of the State, and the difference is merely in the mode of effecting this end We must, therefore, I think, regard the tripartite division of the functions of government as erroneous, or, rather, inaccurate, and adopt the twofold division, namely, into the *judicial* and the *administrative* functions, distributing—as will be explained more fully when we come to treat of the organization of the government—the function of *legislative jurisdiction* to the former and that of *administrative legislation* to the latter. And this division of the functions of government, it will be found, is theoretically confirmed by a consideration of the ends of government, and historically by a consideration of its primitive organization, and of the subsequent development of the judicial function and of the law.

§ 34. *Theoretical and Historical Argument in Support of this Division.*

The ends of the State were considered in the preceding chapter, and it was there shown that there are only two theories with regard thereto that are worthy of consideration. The first of these is the strict judicial theory that regards the administration of justice, not only as the principal, but as the sole, end of the State, the other admits that this is the principal end of government, but holds that, in subordination to this function, and, so far as may be consistent therewith, it also comes within its end, and consequently its function, when necessary, to supervise, protect and encourage the natural development of society The former, that is, the judicial function, being the essential and paramount end of government, should obviously be regarded as essentially distinct from all others, which must be held merely subordinate The exercise of this function, however, obviously demands the existence of a government, and the administration of its powers and resources, both with regard to its external and its internal relations, and, in this administration, it may be admitted that the general welfare of the community may be legitimately considered, but this, as we have seen, is a merely incidental or unessential end, which, in itself, would not be sufficient to justify the existence of government Hence, the functions of government should, in the first instance, be divided into (1) the essential and paramount function of causing justice to be observed—which may be called either the *judicial* function or the *function of jurisdiction;* and (2) the subordinate functions of government, all of which are included under what we have called the administrative function The last should be divided into the *legislative* and the *governmental* functions, and a corresponding division should be made of the first, namely, into the function of *legislative* jurisdiction, and that of *ordinary* jurisdiction

This accords precisely with the organization of the primitive State, in which the king, apart from his character of military and administrative chief, is regarded merely as judge, and the necessity of legislation is not even conceived of (*g*); and it also accords with the subsequent development of the law, which has mainly been the result of the exercise of the judicial function, and in which legislation has had but small part. We perceive, therefore, that our twofold division of the sovereign functions of the State into the *judicial*, and the *administrative* function, and especially the distinction made by us between *judicial*, and *administrative* legislation, is not only suggested to us by a consideration of the legitimate ends of the government, and also, historically, by the primitive constitution of the State, but that is also confirmed in the historical development of the law.

§ 85. *Of the Judicial Function of the Government.*

With regard to the judicial function, therefore, its province may be readily determined. It includes, as we have observed, the functions both of *legislative*, and of *ordinary jurisdiction;* and in the exercise of either of these functions the same principle should be applied, as to all other functions of the government, namely, that they should be exercised only in aid of the natural development of society, to which the interference of government should be merely ancillary, and not in such a manner as to interfere with its natural progress

In applying this principle, the first phenomenon that should attract our attention is that the observance of justice is, in the main, provided for by nature itself Men living in society inevitably conceive certain notions of justice, and of right and wrong, and these, by a process of nature that appears to be necessary in its action, become common or universal, and thus, as we have seen, is created the received or positive right of the people; which, in general, covers nearly the whole field of jural relations, and which is, in the main, a correct expression of the principles of natural justice, as theoretically defined, and which, also, is the practical standard which men ought to observe, and to which, by an impulse of nature, they involuntarily submit, and it is this which constitutes the means by which society, and government, and even civilization, become possible

Hence—as the development of the theory and principles of right is, in the main, like the rest of the development of society, natural and spontaneous—it follows, as an application of the organic theory, that the function of judicial legislation is merely supplemental to natural functions, that it does not extend to the abrogation of the principles of natural justice, but merely to protecting them, and to encouraging and directing their natural development to such extent as necessity may demand, and no further.

With regard to the function of ordinary jurisdiction, a few additional observations will be necessary Jurisdiction is of two kinds, namely, *civil*, and *criminal*,—the former consisting in the power to hear and determine controversies between individuals as to their mutual rights, the latter in the power to hear and determine accusations of crime, which, so far forth as they enter into the domain of jurisdiction, are merely controversies between individuals and the State

The *criminal* jurisdiction will first be considered The right of punishment is based exclusively on the right of self-defense, which is necessarily vested in the government as it is in the individual, (*Vim vi repellere omnia jura clamant*) It is, therefore, in its essential nature, merely the war power exerted against internal enemies, for the criminal is in fact at war with the State The right, therefore, is strictly limited by necessity, which is its only justification, (*Salus populi suprema lex*), and, in its essential nature, it is the same as the right in war over captured enemies The State, therefore, has no right to inflict punishment by way of retribution, or for the purpose of reforming the criminal, but merely for the purpose of the prevention of crime by example of punishment or by actual restraint. I do not say, it will be observed, that the functions of the State do not extend to the reformation of the criminal, but only that the justification of such a function does not rest upon the right of punishment

The right, therefore, extends no further than to inflict the punishment demanded by the necessity of preventing crime Beyond this, the State has no right over the person, the property, or the labor of the convict, and hence the practice, universal in our penal system, of compelling the convict to labor for the benefit of the State, is as unjust as it is unwise For, in the one aspect, it takes from the convict the incentive of exertion, and thus destroys almost the only practical means of reformation, and, on the other, it constitutes an unnecessary and unjust conversion of the person, the labor, and the property of the citizen to the use of the State, and thus by impressing upon him the fact that justice is something with which, in the view of society, he has no concern, still further corrupts the sentiment of justice in the heart of the convict Nor is this injustice excused by the fact that no profit results to the State from the policy, or, in other words, that the business does not pay, but rather, on this account, we may say, to use the somewhat immortal language of the diplomatist "It is worse than a crime, it is a blunder "

The question of punishment is not a *judicial* one, but pertains to the *governmental* power, but before the right to punish can accrue, a question of *jurisdiction* must necessarily arise, namely, to determine whether the accused is guilty of the crime charged, which, as we have observed, is a controversy between the individual and the government, affecting the private rights of the former, and hence essentially similar in character to controversies between individuals For every penal prosecution is in effect a suit by the State to establish a right over the person of the accused

With regard to the civil jurisdiction, it may be said that there is no other power or function of government of which the nature, end, and mode of exercise is, in this country and England, and in these latter days, so thoroughly and generally misunderstood Briefly, the function is precisely what the etymology of the term, *jurisdiction*, indicates, namely, to declare *the right* between men, in controversies presented to the courts for determination,* but, as commonly conceived, it is merely the power or authority to declare the legislative will with regard to the controversy. This—while as a universal proposition utterly false—is, to a certain extent, true, for there are many matters that are within the right of the legislator to determine, and as to these, when its will is declared, justice requires it should be observed, and hence the function of administering justice necessarily includes the obligation or duty to observe all valid laws But, as we have seen, judicial legislation, even in modern times, is extremely limited in its scope, and laws and statutes therefore constitute but an infinitesimal part of the principles by which, in practice, rights are determined It is, indeed, as we have seen, asserted by Austin and others, that the courts are in fact vested with legislative power; and that their decisions being precedents for future cases are in their essential nature laws differing in nothing from statutes except in the mode of expression (h) and hence that the law is a mere expression of the will of the State consisting exclusively of laws or statutes enacted either by the ordinary legislature or the judges but this proposition is manifestly untenable and as fortunately the subject will be more or less familiar to the reader it will therefore be sufficient on these points to observe that the proposition is opposed to the uniform opinion of the jurists both of our own and of the Roman law as embodied in the maxim *Judicis est jus dicere non dare*, and that it is in conflict with the rule of *stare decisis* as uniformly interpreted by the authorities of either law (i) The effect of judicial decisions so far as they are binding in the courts is simply that accorded to custom generally If they have entered into the life and mode of business of the people or in other words have become part of their general customs they must in general be observed and hence the validity of precedents rests upon precisely the same grounds as does that of customs which are to be observed only when it is reasonable or just that they should be

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* "Jurisdiction, *jurisdictio* an authority or power which a man hath to do justice in causes of complaint brought before him," *Jacob's Law Dictionary*.

Beyond this—on the principle *Cuilibet in sua arte perito* —judicial decisions and the opinions of jurists carry with them as do those of experts in all branches of knowledge a certain authority but in the law as elsewhere authority is to be regarded as a mere aid in arriving at truth and can in no case be held conclusive Naturally every judge will avail himself of the labors of other judges when questions investigated by them come before him and he is bound to give their views a respectful consideration but the weight of the authority will vary in all cases according to the learning and ability of its author and the cogency of his reasoning and in all cases except where the decision has passed into custom and become an accepted canon of property and conduct the judge is bound to reject it if in his opinion it is clearly erroneous

§ 36 *Of the Administrative Function*

With regard to the administrative function its nature and the various modes of its operation the subject is too extensive to be entered at length upon here It is sufficiently defined however, as including all the functions of government that do not properly belong to the judicial function that is either to the function of *ordinary* or to that of *legislative* jurisdiction and it is to be subdivided into the *legislative* and the *governmental* functions As to the precise division between these it must be determined by practical considerations as there is, or at least I know of no principle by which they can be sharply distinguished The subject therefore will belong more properly to the subject of political organization

§ 37 *Of the Function of Political Organization*

One of the advantages of the above division of political functions is that it enables us to separate clearly the organic function, or function of political organization, from the functions of the ordinary government The exercise of this function is illustrated by its practical workings in the Constitutions of this country, and, from this, has come to be generally recognized as an essentially distinct function by European jurists The practical mode in which it is usually exercised is too familiar to us in this country to require any explanation, and it will, therefore, be sufficient to say of it that the principles which should govern its exercise are simply those of natural right, and, subordinately to these, considerations of the common welfare

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NOTES.

(*a*) "Now in all States there are three particulars, in which the careful legislator ought well to consider what is expedient to each form of government, and if these are in a proper condition, the State must necessarily prosper, and according to the variation of each of these, one State will differ from the other The first of these is the assembly for public affairs, the second, the officers of the State (that is, who they ought to be, and with what power they should be invested, and in what manner they should be appointed), and the third, the judicial department" (*Politics*, Chap. xiv).

(*b*) *Esprit des Lois*, Bk. xi, Chap vi, a work that has had an immense influence on political thought, and is still very entertaining reading, but which has no pretensions, or, at least, no just pretensions, to the character of science A better title for it, it has been suggested, would have been, *Esprit sur Lois*.

(*c*) *Constitution U. S*, Art i, ii and iii; *Constitution Cal*, Art. iii, Sect. 1 See also the Constitutions of other States.

(*d*) This error, with many others, is exemplified by Kant "Every State contains in itself THREE POWERS, the universal, united will of the people being thus personified in a political triad. These are *the legislative power*, *the executive power* and *the judiciary power* (1) The legislative power or the sovereignty in the State is embodied in the person of the lawgiver, (2) the executive power is embodied in the person of the ruler who administers the law; and (3) the judiciary power, embodied in the person of the judge, is the function of assigning every one what is his own, according to the law (*Potestas legislatoria, rectoria et judiciaria*). These three powers may be compared to the three propositions in a practical syllogism: The major, as the sumption, laying down the universal law of a will, the minor presenting the *command* applicable to an action according to the law, as the principle of the subsumption, and the conclusion containing the sentence or judgment of right in the particular case under consideration" (*Philosophy of Law*, p. 165).

We add Mr. Bluntschli's view of this position "Another error which is almost childish, is that which treats the organism of the State as a logical syllogism · the legislative power determining the rule or major premise, the judicial power subsuming a particular case under it (minor premise), while the executive carries out the conclusion. All the functions of the different powers would thus be united in every judicial decision, and government would be only the policeman to execute this judgment" (*Theory of the State*, p. 520).

(*e*) "This theory, according to which three powers are admitted, namely, the legislative, the executive, and the judicial, was propagated by Montesquieu, who believed that he had derived it from the Constitution of England But the Constitution of that country did not recognise such a separation of powers, since the king is there an integral part of the parliament . But, as the theory of Montesquieu, adopted even in England (Blackstone), did not respond to the political reality, which presented in the royal power something more than a power purely executive, it was found necessary to complete it by the theory of the *royal prerogative*, which is useless when the governmental power of the State is well understood . We see also that in France, during the first revolution, Clermont Tonnerre, and, later, B Constant, sought to complete the theory by the doctrine of a fourth power, called the *royal* power, and in Germany, there is generally added to the three powers an *inspective* power, which is equally comprehended, as we shall see, in the just notion of the *governmental* power—such as exists in democracies as well as in monarchies."

B Constant says, in his *Cours de Politique Constitutionelle*

"It will be regarded as strange, that I distinguish the royal power from the executive power. This distinction, always misconceived, is very important, it is, perhaps, the key to all political organization I do not claim the honor of having invented it, the germ is to be found in the writings of a man who perished during our troubles" (*ib* , note)

"There is, then," continues Mr Ahrens, "in the State, a governmental function, or power, of which the peculiar functions consist essentially in giving impulse and direction to the public life, in inspecting and supervising the social movement, in keeping itself in touch with its needs, in exercising the initiative in legislation, and in administration, in representing the State in its international relations, and in constituting the point of union and connection for all the other powers and their principal functions. For this last and important need, the government ought to participate in legislation, by exercising an initiative, and by a veto, either absolute or at least suspensive. Likewise the government inspects and supervises the juridical functions, and directs directly the administration" (*Cours de Droit Naturel*, p 357)

"Government or Administration (*Regierungsgewalt*). The usual expression, 'Executive (*vollziehende*) power,' is unfortunate, and is the source of a number of errors, misunderstandings in theory, and mistakes in practice. It neither expresses the essential character of government, nor its relation to legislation and the judicial power .

"The essence of government consists rather in the power of commanding in particular matters what is just and useful, and in the power of protecting the country and the nation from particular attacks and dangers, of representing it, and guarding against common evils. It consists especially in what the Greeks call the Roman's *imperium*, the Germans of the Middle Ages *Mundschaft* and *Vogtei* (*tutelle* and *bailliage*) Of all other powers government is the ruling, and, without doubt, the highest, being related to the others as the head to the limbs of the body It includes what is called the *representative power*" (Bluntschli, *Theory of the State*, p. 521).

(*f*) "The judicial (*richterliche*) power is often regarded as the power which judges (*urtheilen*)—a confusion which is favored by the French (and English) expressions (*pouvoir judiciaire*). But the essence of judicial power consists not in judging (*urtheilen*), but in laying down the law (*richten*), or, according to the Roman expression, not *in judicio*, but *in jure*. 'Judging,' in the sense of recognising and declaring the justice in particular cases, is not necessarily a function of government, nor the exercise of a public power. In Rome it was commonly entrusted to private persons as *judices*, in mediæval Germany to the assessors (*Schoffen*), not the judges (*Richter*). In modern times it is often entrusted to popular juries. Maintaining the law, on the other hand, and protecting the rights of individuals and of the community, has always been considered as a magisterial function" (Bluntschli, *Theory of the State*, p. 523).

These observations are just , except that I do not see that the English expression, "the *judicial* power," or the corresponding French expression, is open to objection. Etymologically it precisely expresses the idea of Mr. Bluntschli.

(*g*) "It is certain," says Sir Henry Maine, "that in the infancy of mankind, no sort of legislator, nor even a distinct author of law, is contemplated or conceived of." "Zeus, or the human king on earth," says Mr Grote in his *History of Greece*, "is not a lawmaker but a judge" (*Ancient Law*, Chap 1) Hence, in the history of nations, legislation is a phenomenon of comparatively late appearance, coming into existence only as its necessity, as a curb upon irresponsible power, becomes developed

This ancient view of the function of government was well expressed in the cry of the Israelites to Samuel · 1 Sam , chap. viii 19, 20

"Nay, but we will have a king over us, that we may be like all the nations, and that our king may judge us, and go out before us, and fight our battles"

(A) The doctrine of Austin may, however, be briefly refuted by considering the consequences logically involved in it. It is avowedly founded on the rule of *stare decisis*, of which, indeed, it purports to be but an expression It will therefore apply to the decisions of the courts on the construction and effect of statutes, equally as to their decisions on other questions. Whatever doubts and conflicts may have arisen with reference to the application of the rule in other respects, it has never been suggested that there is any distinction to be made between its application to acts of the legislature, or ordinary statutes, and its application to rules otherwise established Hence it follows that the ordinary legislature cannot enact a valid law as to matters of private right, for such law, or supposed law, cannot be enforced otherwise than by the courts, and is, therefore, without a sanction—which, according to the theory, is an essential element of a true law—until it be so recognised, and, if the courts fail to recognise it, or give it an erroneous construction, it can never become law In this respect, statutes stand in precisely the same category as customs or principles of natural right, which, according to the theory, cannot become law until adopted by the courts.

Nor can there be any law of any kind binding on the judges. For, being vested with legislative power, they can, if they please, disregard the decisions of their predecessors, not only with impunity, but without blame For the legislative power is, in its essential nature, an arbitrary power, and to be exercised according to the maxim, *voluntas stat pro ratione*, and the rule applies, *leges posteriores abrogant priores*

Hence, as the ultimate consequence of the doctrine, we must conclude that law is in fact impossible, and that the sole standard of men's rights must always consist in the fluctuating and unforeseeable opinions, or rather decisions, of the courts, and this, in fact, it is to be apprehended, is something like the condition to which the influence of this pernicious doctrine upon modern lawyers has reduced the law in this country at the present day.

(c) The doctrine of our own law is thus expressed by approved authorities "Even a series of decisions," says Chancellor Kent, "are not always conclusive evidence of the law, and the revision of a decision very often resolved itself into a mere question of expediency, depending upon the consideration of the importance of certainty in the rule and the extent of property to be affected by a change in it Lord Mansfield frequently observed that the certainty of a rule was often of much more importance in mercantile cases than the reason of it, and that a settled rule ought to be observed for the sake of property, and yet perhaps no English judge ever made greater innovations or improvements in the law, or felt himself less embarrassed with the disposition of the older cases when they came in his way to impede the operation of his enlightened and cultivated judgment." "The law of England," he observed, "would be an absurd science, were it founded upon precedents only" (1 *Kent's Com.*, 47)

As is said by Chancellor Wentworth, speaking of this maxim "While another maxim—*humanum est errare*—remains true, there must occasionally be a reconsideration and overruling of former judgments. If on a reexamination the former error is clear, our duty is plain, we must be, as Lord Coke said Sir John Fortescue was, 'not amongst the number of those *qui suos amarent errores*, but one of those who yielded to the truth when he found it'" (Preface to 10 *Coke*).

The function of the judge is thus admirably explained by Hobbes · "The interpretation of the law of nature is the sentence of the judge constituted by the sovereign authority to hear and determine such controversies as depend thereon, and consisteth in the application of the law to the present case. For, in the act of judicature the judge doth no more but consider whether the demand of the party be consonant to natural reason and equity and the sentence he giveth is therefore the interpretation of the law of nature which interpretation is authentic because he giveth it by authority of the sovereign whereby it becomes the sovereign's sentence which is law for that time for the parties pleading

But because there is no judge subordinate nor sovereign but may err in a judgment of equity if afterwards in another case he finds it more consonant to equity to give a contrary sentence he is obliged to do it No man's error becomes his own law nor obliges him to persist in it Neither for the same reason becomes it a law to other judges though sworn to follow it For though a wrong sentence given by authority of the sovereign if he know and allow it in such laws as are mutable be a constitution of a new law in cases in which every little circumstance is the same yet in laws immutable such as are the laws of nature they are not laws to the same or other judges in like cases forever after Princes succeed one another and one judge passeth another cometh nay heaven and earth shall pass but not one tittle of the law of nature shall pass for it is the eternal law of God Therefore all the sentences of precedent judges that have ever been cannot all together make a law contrary to natural equity nor any example of former judges can warrant an unreasonable sentence or discharge the present judge of studying what is equity in the case he is to judge from the principles of his own natural reason (*Leviathan* pp 123 129)

We may therefore with Mackeldey adopt for our motto the sentence of Cujacius *Utinam qui hoc tempore jus nostrum interpretantur Papinianum imitati quæ vel falso vel inepte aliquando et senserint et scripserint ingenue retractent nec eis contra quampostea resciverint tam obstinato tam que obfirmatio animo (uti faciunt) perseverent* (Kaufman's *Mackeldey* Preface)

CHAPTER IV.

OF THE NATURE AND METHOD OF JURISPRUDENCE

§ 38. *Public Right a Branch of Jurisprudence or the Science of Rights.*

The subject of the rights of the State, or public right, does not in itself constitute a complete and independent subject of investigation, but merely a division or part of a more general subject, namely, the science of rights or justice, or, as it is more commonly called in our language, Right, and in other languages, *Recht, Droit, Diritto, Derecho*, etc Some observations on this subject will therefore be required before entering upon the immediate subject of our investigations, which is, the rights of the State These will be found in this and the following chapter

The term, Right, like its foreign equivalents, denotes rather the subject of the science—*i e.*, rights in the aggregate—than the science itself, and its use in the sense above given is, therefore, to some extent inaccurate On this account it is desirable to use some other term that, like the German *Rechtslehre*, may more accurately denote the science itself, and for this purpose no other can be suggested than the term, Jurisprudence, which—though of late years it has, in our language, drifted somewhat from its meaning—is now generally thus used in other languages and not uncommonly in our own.

Etymologically the term Jurisprudence denotes merely the science or doctrine of *jus;* but the latter term—like its equivalents, *right, recht, droit, diritto, derecho*, etc —is commonly used to denote not only theoretical right, but also positive right, or right actually realized in the State by means of the law, and the term Jurisprudence necessarily presents a corresponding ambiguity The latter use of the term is, indeed, in our language, the most common, and hence with us the term Jurisprudence is generally regarded as belonging exclusively to positive right, or, as we call it, the law, and its application to theoretical right seems to carry with it some appearance of impropriety. On this account it has become a common usage to distinguish theoretical from positive jurisprudence by calling the former *natural* jurisprudence, and to this usage, where necessary to avoid confusion, no objection can be made But in this work, unless the contrary is expressed, we uniformly use the term in the sense of theoretical or natural jurisprudence

§ 39. *Division of Jurisprudence or Right.*

The term Right, as we have observed, is but an expression for rights in the aggregate, and it may relate either to private or individual rights or to the rights of the State. Accordingly, right is divided into two parts, called respectively, after the Roman jurists, private right (*jus privatum*) and public right (*jus publicum*), the former of which deals with private rights, the latter with the rights of the State

Public right is commonly regarded as referring only to the rights of the State as against its subjects, or, as they may be called, its internal rights, but according to its real sense, and the definition given of it, it would seem to include also the external rights of the State, or the rights of the State as against other States But the latter constitute the subject matter of International Right, or the Right or Law of Nations (*jus gentium*), which, for many reasons, it will be better to consider as an independent subject of investigation Jurisprudence will, therefore, be regarded in our present investigation as dealing with three subjects, namely, (1) Private Right, (2) Public Right, regarded as denoting the internal rights of the State, and (3) International Right, or the right or law of nations The last two constitute the peculiar subject matter of the theory of the State

§ 40 *Jurisprudence or Right, a Department of Morality.*

But Right itself, or Jurisprudence, is but a branch of a more extensive science, namely, Morality or Ethics, which comprehends not only the subject of duties but also that of rights or justice The latter subject is indeed so broadly distinguished from the rest of Morality that it may with convenience be considered independently; but its connection with Morality generally must be borne in mind, if for no other purpose than that of realizing the fact that the problem of rights, private and public, is purely a problem of Morality, or of right and wrong. For the term Right carries with it as an essential part of its signification or connotation the quality of rightness, and hence, *ex vi termini*, all rights are moral rights, and there can no more be a right of any other kind than there can be a two-sided triangle or a square circle Hence, in inquiring as to the nature and extent of the powers of the State, the subject of our investigation is not the mere historical problem of defining the actual powers that are or have been exercised by different governments, but, in the accurate and profound language of Hobbes, it is to determine "what are the rights or just power or authority of a sovereign" *

§ 41. *Morality Distinguished from the Philosophy of Morality.*

But at this point we are confronted by an apparently formidable problem, namely, the metaphysical problem as to the nature of the distinction between right and wrong This subject is one of great importance and of absorbing interest to the philosophic mind, but fortunately the solution of the problem is unnecessary to the jurist or the moralist, whose task is to determine, not the abstract nature of the quality of rightness, but its presence or absence in given cases Hence the question of the abstract nature of the distinction between right and wrong belongs rather to the Metaphysics of Morality than to Morality itself, which is concerned only with a practical question of determining as to the rectitude of human conduct To assert that the solution of this question must abide the solution of the metaphysical problem—hitherto unsolved, and of which, as of other metaphysical questions, there appears no promise of a solution—would be in effect to assert in the face of history that man is incapable of moral development, and, consequently, of civilization. But, on the contrary, it is manifest that the metaphysical problem was itself suggested by the previously existing moral judgments of mankind, and could not present itself as a distinct subject of inquiry until Morality had already been highly developed Similarly, men reason without understanding logic, and logic itself must be developed before the metaphysical question as to the ultimate grounds of human knowledge can arise But, as Locke says, "God did not make man a mere two-legged animal and leave it to Aristotle to make him a reasonable creature" And with like reason it may be said that fortunately it has not been left to the metaphysicians to make him a moral being

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* *Leviathan*, Introduction.

There is also another interesting problem that seems to touch upon the subject of our investigations, namely, the psychological problem as to the faculty or faculties by which moral obligations and the necessity of observing them are perceived But this, also—though more susceptible of solution than the metaphysical problem—does not fall within the scope of our inquiry, but belongs rather to the Philosophy of Morality than to Morality itself For our task is to determine neither the abstract nature of the quality of rightness, nor the nature of the faculty by which we perceive the obligation to conform to it, but merely the rectitude of this or that course of human conduct, and in this investigation it is manifestly indifferent what metaphysical or psychological theory we adopt, provided only it assert the reality of moral distinctions and the possibility of perceiving them

It will be sufficient, therefore, to say that we use the terms, right and wrong, in their ordinary and familiar acceptation, as denoting a universal and apparently necessary conception of the human consciousness, and that the reader is at liberty to adopt a more specific definition, according to the theory to which he may incline—as, for instance, that it consists in conformity to the will of God, or to nature, or to the universal order, or to the end or destiny of man, or to general utility, or the welfare of mankind

The above considerations, though sufficiently obvious, have not generally been observed, and through this neglect have resulted the most deleterious consequences to Jurisprudence and to Morality generally For to inquirers on these subjects almost the first questions that present themselves are the metaphysical and psychological problems, and these seem imperatively to demand a solution and almost invariably to absorb the attention of the inquirer. The result is that some waste their labors in the production of unsatisfactory theories, and others, discouraged by failure and impatient to approach the practical questions involved, cut the Gordian knot by denying the existence of any material distinction between right and wrong Of the latter, the most conspicuous instance is presented by the theory of Bentham and Austin and of the modern English school of jurists, which is based wholly upon the assumption that the distinction between the just and the unjust is merely of human imposition

§ 42 *Of the Moral Standard.*

Questions of right and wrong, in the concrete, present in general but little difficulty, and consequently there is a remarkable unanimity in the moral judgments of men in the same state of civilization, and even in different ages and countries, with reference to what may be called the fundamentals of morality No one, for instance, can contemplate the crime of murder or robbery without disapprobation , or, to refer to less extreme cases, there are none who will deny the obligation to return a deposit, or to compensate for an injury, or to repay a loan These and similar principles are universally admitted, and in fact furnish the crucial test by which all theories of morality are to be judged, and to which the advocates of all theories appeal But the difficulty consists in expressing satisfactorily the ultimate test or criterion by which conduct is to be judged ; and on this point the widest difference of opinion exists To me, however, it seems that the solution of the problem is to be found in the consideration that there are, in fact, two standards intimately related, but between which it is necessary to distinguish, namely, the *theoretical* and the *practical*, the former consisting in rational principles by which our judgments should be formed and our conduct governed so far as it may affect ourselves only , the latter, —as we have explained—in the common moral convictions, or general conscience, or, in other words, the positive morality of the community, by which, in matters affecting others, our conduct ought to be determined These standards are not antagonistic, or even entirely independent of each other For, on the one hand, it is a manifest principle of theoretical morality that the established morality should be observed , and, on the other, such is the constitution of human nature, that, just as the cannon ball nearly coincides with the trajectory curve as scientifically determined, so *positive* tends to conform, and in civilized countries substantially conforms to *theoretical* morality The former has already been considered,* and it only remains, therefore, to consider the latter

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* *Supra*, p. 226.

§ 43. *Of the Theoretical or Rational Standard.*

With regard to the theoretical standard, it is obvious that reason is the sovereign judge of conduct, and that all assumed principles of morality must be submitted to the test of its judgment Hence the standard of right and wrong must consist of principles or propositions derived either from intuitive reason or from the rational investigation of the nature of man and of his environments and experience (a)

Of these principles—besides that of Liberty, which will be fully considered hereafter—there are two, more general in their character and application than others, that may be conveniently considered here, namely, the principle of Necessity and that of Utility The former is rudely expressed in the maxim, *Salus populi suprema lex*, and may be more accurately expressed in the proposition that whatever is essential or necessary to the existence and well-being of man or society is at once right and obligatory, the latter, in the proposition that whatever conduces to the welfare or happiness of mankind is, if not obligatory, at least right

(1) Of the two principles, that of Necessity, though less extensive in its scope, is of the greater practical utility, and from it, as we shall see, nearly all the admitted principles of political science are derived It may, therefore, be said to constitute the foundation of the science.

(2) The principle of Utility, in the form in which it has been generally asserted—namely, that of Utilitarianism—is altogether without definite signification, and cannot either be accepted as true or asserted to be altogether false, but it may be asserted of it, as of indefinite theories generally, that its influence, both in theory and in practice, upon political science and morality, has been greatly deleterious It will, therefore, be necessary to determine accurately the signification of the principle of Utility, and to inquire how far it may be accepted as a rule of right.

To say that anything is useful is, in itself, altogether unmeaning To give the expression definite signification it must be stated for what and to whom it is useful Leaving out of view the former problem—which, it may be said in passing, involves the whole subject of the destiny of man and the end of human conduct—it is obvious that the term *useful*, or *utility*, is a relative term, implying some man or men whose utility is considered, and that its meaning must differ essentially according to the correlative to which it is applied Thus, obviously, the mere private utility of the individual cannot be adopted as the test, and we must also reject the principle that the happiness of the majority or the greatest good of the greatest number is to determine, for it cannot be asserted that it is right that the happiness of any innocent man should be sacrificed to that of any other man or men, except in cases where there is an obligation on his part to submit to such sacrifice and a corresponding right of such others to exact it. We must also reject the theory of utility as commonly received, which is that *general* utility is the test For the term *general* utility is indefinite and we cannot determine from it the number or class of individuals whose welfare is to be considered

There remains therefore but one form of the principle to be considered which is that the happiness or welfare of all—that is of every individual—must be accepted as the test of right and which may therefore be called the theory of universal utility and this indeed is the only form in which the principle is not obviously false For to assert that anything is useful to the community or to mankind or to any other class is to assert that it is useful to every individual of the class referred to Otherwise if we speak correctly we must specify the individuals or class of individuals to which the proposition is intended to apply as for instance that it will be useful to a majority or to two thirds or three fourths or to some other proportion Hence the only form in which the principle can be received is that in which it asserts that whatever tends to the welfare of every individual in the community must be accepted as right But even in this form the proposition is still indefinite For when we speak of any course of conduct as right we may mean either that it is imperatively right or obligatory or that it is merely permissibly right i e not wrong In the latter sense the proposition expresses not the notion of duty but merely that of liberty In the former it expresses the notion of obligation and in this sense I can conceive of no principle on which the proposition can be asserted to be true

It is however assumed in all theories of morality that the observance of right must necessarily tend to the happiness and welfare of the individual and of mankind generally And from this it may be inferred that the welfare of mankind is a necessary consequence of right conduct and therefore if not of the essence at least a property of right and hence that whatever is pernicious to any one is wrong The principle of utility therefore in this its negative form—that is as asserting that whatever is pernicious or detrimental to mankind is to be regarded as wrong—must be accepted and in this form its principal use is in correcting mistakes of mankind made in pursuance of some fancied utility The principle in this form is embodied under the name of the *Argumentum ab inconvenienti* in one of the fundamental maxims of the law and there are few principles of more practical utility to the jurists As given by Coke the maxim is *Argumentum ab inconvenienti plurimum valet in lege* And he adds The law that is the perfection of reason cannot suffer anything that is inconvenient and therefore he says *Nihil quod est inconveniens est licitum* and judges are to judge of inconvenience as of things unlawful

It is of course to be observed that in considering the question of utility regard must be had not to particular but to general consequences or in other words not to the effect of the particular decision but to the effect of the general rule For what is right or wrong just or unjust in one case must be so in like cases and hence right as well as morality generally must consist of general rules applying to all cases of the same class This is insisted upon by all moralists and is but a statement of Kant s Categorical Imperative Act according to a maxim which at the same time can be adopted as a universal law

§ 45 *Of the Method and General Principles of Jurisprudence*

It is in the highest degree important before entering upon the subordinate subject of the rights of the State that we should have some notion of the method and general principles of general Jurisprudence of which the subject of Public Right constitutes only a subordinate department It will be necessary therefore to give here a brief epitome of the subject As we proceed with the work the application and utility of the principles thus briefly stated which at first may be obscure will become clearly manifest

Rights are of two kinds namely rights of *ownership* and rights of *obligation* (*b*) To the former class belong the right of personal liberty and security or of self ownership the right of property and the right of husband in wife and parent in child and *vice versa*, in each of which cases we may say of the subject of the right whether one s person property wife husband parent or child that to the extent of the right it belongs to the one having the right or that it is *his* or his own To the other class belong all rights to the performance of obligations whether rising from contract or delict or *ex mero jure* without the intervention of either—the term obligation being here used in its strict and proper sense as denoting a duty from one person to another the performance of which may be rightfully exacted by the obligee or person to whom it is owed A mere duty without such corresponding right to exact its performance properly speaking is not an obligation Thus where one owes to another money or has the property of another in his possession either unlawfully or as a mere bailee or has injuriously damaged another there arises upon his part an obligation to pay the debt or to restore the property or to compensate the party injured as the case may be and there is also a corresponding right in such other party to exact the performance of the obligation But the duty upon the part of a man to assist a neighbor or friend or to perform a charitable act is in general a mere duty and not an obligation nor is there any right upon the part of any one to exact its performance

If we analyze the notion of a right of the former class—as for instance a right of property—it will be found to consist merely in the *liberty* or *power* of the owner to act freely to the extent of the right with regard to the thing owned according to the dictates of his own will and free from interference by others and this we will find to be also true in the case of rights of obligation For such a right in its ultimate analysis consists also in the liberty or power to act freely to the extent of the right with reference to its subject which in this case is euphoniously said to be the obligation but is in reality the obligor himself whose free action the obligee by virtue of his right has the liberty or power to control if he shall choose to do so Hence obviously a right consists in the liberty or power of acting (*facultas agendi*) in a specific case or class of cases and the aggregate of a man s rights is therefore but another expression for the general liberty to which he is justly entitled

It is obvious however that the liberty or power to act in which consists the essence of the right is not to be understood as actual power or liberty For it is clear on the one hand that a man may be prevented from exercising a right and the right nevertheless continue to exist—as for instance where he is unjustly imprisoned or deprived of his property—and on the other that he may have the actual liberty or power to interfere with the rights or liberty of another without having the right to do so The liberty or power in which a right consists must therefore be understood as consisting in *rightful* or *jural* liberty or power—that is liberty or power which he rightfully has or which it is right that he should have

In this definition it will be observed the terms liberty and power have been indifferently used These in a certain sense are apparently opposed in meaning but in this connection and in their strict and proper sense are substantially synonymous—the difference between them corresponding merely to that between the terms may and can in each of which two notions are signified namely the absence of restraint and ability to act for obviously one cannot have the liberty to act without the ability or the ability without the liberty Hence in logical phrase the difference between the terms is that the term liberty denotes the absence of restraint and connotes ability to act and conversely the term power denotes the latter and connotes the former In all cases of rights of obligation however the act which the owner of the right has the liberty or power to do is to coerce another and hence there is implied in it a power or control over the obligor and in common language this is perhaps the idea most prominently suggested by the term power But in this case as in the case of rights *in rem* where no control over others is necessarily implied the term liberty to act is equally applicable and on account of the ambiguity of the term ‘power is in general to be preferred as the more appropriate term Accordingly we will define a right as the *jural* or rightful liberty to act (*facultas agendi*) in a given case or class of cases and rights in the aggregate or right as *jural* liberty or the general liberty to which one is justly entitled

It follows therefore that the ultimate problem presented by jurisprudence is to determine the extent of the rightful or *jural* liberty of the individual

But as in general this liberty exists in every case in which one may not be rightfully restrained by other individuals or the State and as there is always a presumption in its favor, the immediate problem is to determine the exceptional cases in which the liberty of the individual may be rightfully restrained

But the rightful liberty or power to restrain the free action of an individual, where it exists, like the liberty or power to do any other act, is, *ex vi termini*, a right, and it follows, therefore, as a fundamental principle of jurisprudence, that the rightful liberty of the individual is limited, and limited only, by the rights of other individuals or of the State

And as the presumption is always in favor of liberty, the burden of proof is in all cases obviously upon the party asserting the right In this respect no distinction can be made between the rights of individuals and the rights of the State, but where a right is asserted in either which derogates from the liberty of the individual, it cannot be admitted unless a sufficient reason can be given for its existence

The propositions above stated determine what may be called "the Method of Jurisprudence" This is, in substance, the method of Hobbes, who has been followed in this respect, and in the theory of the State generally, by Kant and his followers. It is also the method of Herbert Spencer, as explained both in his *Social Statics* and *Justice*. The fundamental principle of Mr Spencer is "that every man may claim the fullest liberty to exercise his faculties compatible with the exercise of like liberty by every other man" Or, as he elsewhere expresses it "Every man has freedom to do all that he wills provided that he infringes not the equal freedom of any other man," and accordingly every asserted right is to be proved "by showing that the particular exercise of the faculties referred to is possible without preventing the like exercise of faculties by other persons" (*c*)

According to Hobbes and Kant the power or right of the State is absolute or unlimited, which, as we have seen, is a manifestly untenable proposition According to Spencer it is limited by the law of equal liberty But this also is untenable, for the very existence of private rights, *ex vi termini*, imports an inequality of liberty. All that can be said is that the rights or rightful liberty of each is limited, and limited only, by the rights of other individuals or of the State (*d*)

§ 46 *Of Certain Principles of Right.*

There are numerous subordinate principles bearing peculiarly upon the determination of private rights which—though not properly belonging to the immediate subject of our investigations, viz, the rights of the State—must be briefly referred to

(1) Of these one of the most important is what may be loosely called "the law of equal liberty"—a principle uniformly asserted but not accurately expressed by jurists and philosophers It may be formulated and demonstrated as follows:

In determining whether a right exists in any one which derogates from the liberty of another, or, in other words, whether restraint may, in any given case, be rightfully imposed, the obvious principle suggests itself that such a right cannot be affirmed unless it can be equally affirmed of all others standing in the same jural relations, for the burden of proof lies upon him who asserts the existence of such a right, and according to the hypothesis it is impossible to assign any reason why such a right should exist in one case and not in all similar cases The principle may, therefore, be expressed by saying that the *jural* or rightful liberty of all men *in the same case* is equal, or, in other words, that restraint cannot be rightfully imposed upon any one unless it may be equally imposed upon all others in the same case—meaning by the term "the same case" a similarity of circumstances material to the question of right Thus, the circumstance of infancy, or of mental unsoundness, clearly distinguishes the case of the infant or *non compos* from that of the ordinary man, and so the circumstance that one has manufactured an article of personal property clearly distinguishes him from others But obviously the principle can have no application to the State, which stands in a case peculiar to itself

(2) Another principle is that of restitution in case of delict—*i e*, that where one is deprived of his property, or liberty, or other right, he should be restored to its enjoyment And it seems equally obvious that, where restitution in kind is impracticable, restitution in value or compensation should be made, and the injured party restored, as far as possible, to his original condition

(3) Another and most important principle is that in certain cases custom must be considered in the determination of rights This is not only true in the case of contract, where custom is important in determining the intention of the parties, and in cases of delict, where it is important in determining the question of negligence, but it is also true generally that custom should be observed as law, and this is, in fact, its most important aspect Its efficiency in this respect is generally attributed to the fact that it necessarily implies a general consent or agreement as to the particulars to which it relates, which is undoubtedly true But the most important reason for its efficiency is that human nature is so constituted as to act involuntarily with reference to custom, and hence that a violation of custom must result in a disappointment of men's legitimate expectations, and on this account, and because it is also the most perfect expression of the general will, custom should have a superior efficacy to legislative enactments And this, in fact, is substantially the case, for, with regard to private right, statutes become operative only when they conform to an existing custom or generate a new one Otherwise they may for a while, at the expense of infinite injustice and hardship, be imperfectly enforced, but ultimately they must give way and become obsolete. Thus, if we compare the common law, or rather the arbitrary and accidental part of it (the *jus civile*), of the time of Edward III, or of Elizabeth, or even of Black-

stône, with the existing law, it will be found to have become almost altogether obsolete, and the instrumentality by which the change has been effected is almost exclusively custom. So true is the observation of Coke that "*Leges humanæ nascuntur vivunt et moriuntur*" Hence, the assertion of Mr Austin and his followers that custom becomes operative only when adopted by the government, cannot be maintained, but it will be nearer the truth to say that laws become operative only when they become custom, and for so long only as they continue to be so

But custom is not conclusive in the determination of rights, for it is an obvious principle of jurisprudence that it is not to be observed unless reasonable And hence, customs enter into the determination of rights only as an element in the problem, and their effect is to be determined by independent principles of right

In this way custom is constantly rectified by reason, and the positive law by means of custom undergoes a rational development Hence, the development of the law proceeds, not from the arbitrary and accidental elements in which it seems, and is commonly supposed to originate, but from justice, or reason, by which the arbitrary and accidental part of the law is slowly but surely eradicated.

(4) Another obvious principle is that of contract, which is usually expressed in the maxim *pacta quælibet servanda sunt*, "compacts are to be observed" This principle is one very generally received, and it has been thought by Hobbes, Locke, Rousseau and others, to constitute a sufficient basis for the theory of the State. But a very little consideration will be sufficient to show that the principle thus generally stated cannot be admitted For there is no system of jurisprudence, positive or natural, that has affirmed, as a universal proposition, that contracts should be enforced Thus, in our own law, contracts without consideration are not enforced, and in courts of equity inadequacy of consideration is regarded as sufficient reason for refusing specific performance, and in the Roman law a certain degree of inadequacy is sufficient to avoid the contract. So both in our own and in the Roman law contracts for penalties and for feitures are not enforced. And many other instances might be cited in which the principle is not observed (*e*)

The true principle as to the obligation of contracts would seem to be the same as that applying to the case of *delict*, namely, that no man should be permitted to be injured, or placed in a worse position by the act of another without compensation. For the same rule that would forbid any one to deprive another of his property, or liberty, by force or fraud, equally forbids him to do it by a promise, even honestly made, and the same rule of compensation would seem to apply, namely, that the injured party shall be restored by the other to his original position.

(5) There is another important element in the determination of rights, to which we will briefly refer, namely, that of laws or statutes. These are mere acts of men who are distinguished from other men only in being vested with the right of legislation, and they belong, therefore, to the

same generic class as grants and other expressions of human will Like private acts therefore they depend for their validity upon the right of the legislature over the matters to which they relate Wherever it is within the right of the legislator to determine any matter the expression of his will with regard to it is conclusive and rights may therefore originate in legislation as in contract or delict, but if a law is in excess of the rightful power or right of the legislator or to use a technical expression is *ultra vires* it has no more force or validity in determining rights than the act of a private individual The existence or non existence of rights cannot therefore be affirmed from the mere enactment of laws but must depend upon the existence of a precedent right in the legislator to determine the matter to which they relate and this is obviously true whatever may be assumed with reference to the extent of the rights of the State For even if it could be assumed that the right of the State to create or to destroy rights in private individuals is unlimited the assumption could be justified only as a principle of natural reason and the laws enacted by the State would thus derive their efficacy from the same principle

Laws in this respect are therefore analogous to contracts grants and other expressions of human will and also to customs and are to be regarded not as establishing principles of right or as entering into the definition of *jus* or the law but as mere elements in the problem of determining rights

(6) Obviously the same distinction must be made between *theoretic* and *positive* jurisprudence as between *theoretic* and *positive* morality generally —the former being jurisprudence as scientifically determined the latter as generally received But the principles of jurisprudence are not only in themselves exceptionally clear and determinate but they have been painfully and perseveringly elaborated by a long succession of great jurists and philosophers from the time of Aristotle to the present day with the result that as to fundamentals the conformity of theoretic and positive jurisprudence is almost perfect and nothing more is wanting to the perfection of Positive Right as received in modern European countries than the accurate formulation of the fundamental principles implicitly contained in every existing system, and their logical development, and consistent application

In conclusion it should be observed that the difference existing between Theoretic and Positive Jurisprudence has given rise to two schools of jurists which are known respectively as the Philosophic or Rational, and the Historical These in popular opinion are often opposed and indeed have often opposed themselves to each other but it is obvious that there is in fact no opposition but that the methods of the two schools are both essential to the study of the subject, and that the true method combines them both

The historical method though inapplicable to theoretical jurisprudence and other branches of pure science is true of positive jurisprudence for the reason that general recognition constitutes in fact the es sential difference between the principles of positive and those of theoretical right (*f*)

NOTES

(*a*) As to the possibility of a moral science see Locke *On the Understanding* Bk iv Chap iii Sec 18 20 from which we extract the following Confident I am that if men would in the same method and with the same indifferency search after moral as they do after mathematical truths they would find them to have a stronger connection one with another and a more necessary consequence from our clear and distinct ideas, and to come nearer perfect demonstration than is commonly imagined ' In the future as in the past all progress in the moral sciences must consist in the recognition and utilization of this truth

It is however, to be understood that in matters already determined by the received or positive morality of the people, it is not the function of political science directly to control the action of government but indirectly only by correcting and developing the general conscience and that all the principles of theoretical jurisprudence are to be received subject to this qualification To use the metaphor of Pindar *Nomos* only is king reason but his counselor

(*b*) The two classes of rights are more commonly called respectively, rights *in rem* and rights *in personam*

(*c*) The proposition in the text is illustrated by the argument of Fichte *Science of Law* p 147 ' If he says reason is to be realised in the sensuous world it must be possible for many rational beings to live together as such and this is permanently possible only if each free being makes it its law to limit its own freedom by the conception of freedom of all others

(*d*) It is admitted by Mr Spencer that he was anticipated in his theory or rather method by Kant but in fact both were anticipated by Hobbes

' Among the tracks pursued by multitudinous minds in the course of ages says Mr Spencer nearly all must have been entered upon if not explored Hence the probability is greatly against the assumption of entire novelty in any doctrine The remark is suggested by an instance of such an assumption erroneously made

' The fundamental principles enunciated in the chapter entitled The Formula of Justice,' is one which I set forth in *Social Statistics* The Conditions Essential to Human Happiness Specified and the First of Them Developed originally published at the close of 1850 I then supposed that I was the first to recognize the law of equal freedom as being that in which justice, as variously exemplified in the concrete is summed up in the abstract I was wrong however In the second of two articles entitled Mr Herbert Spencer s Theory of Society published by Mr F W Maitland (now Downing Professor of Law at Cambridge) in *Mind*, Vol viii (1883) pp 508 509, it was pointed out that Kant had already enunciated, in other words, a similar doctrine Not being able to read the German quotations given by Mr Maitland, I was unable to test his statement When however, I again took up the subject, and reached the chapter on The Formula of Justice,' it became needful to ascertain definitely what were Kant s views I found them in a recent translation (1887) by Mr W Hastie, entitled *The Philosophy of Law, An Exposition of the Fundamental Principles of Jurisprudence as the Science of Right* In this, at p 45 occurs the sentence ' Right, therefore, comprehends the whole of the conditions under which the voluntary actions of any one Person can be harmonized in reality with the voluntary actions of every other Person according to a universal Law of Freedom ' And then there follows this section

" ' UNIVERSAL PRINCIPLE OF RIGHT

" ' Every Action is *right* which in itself, or in the maxim on which it proceeds, is such that it can co-exist along with the Freedom of the Will of each and all in action, according to a universal Law.

" If, then, my action or my condition generally can co-exist with the freedom of every other, according to a universal Law, any one does me a wrong who hinders me in the performance of this action, or in the maintenance of this condition For such a hindrance or obstruction cannot co-exist with Freedom according to universal Laws '

"These passages make it clear that Kant had arrived at a conclusion which, if not the same as my own, is closely allied to it It is, however, worth remarking that Kant's conception, similar though it is in nature, differs both in its origin and in its form "

(e) As for instance, the case of Thornborrow *vs* Whittaker, 2 La Rayne 1164, where one agreed for valuable consideration, to pay two grains of rye corn on the following Monday, four on the next Monday, and so on doubling for each Monday of the year,—and the case of James *vs* Morgan, 1 Lev , 111, approved in Chesterfield *vs* Janson, 1 Wils , 286-295, where one agreed to pay for a horse a barley corn for the first nail in the shoes of the horse, two barley corns for the second, and so on doubling for the whole number of twenty-four, in each of which the contract was held void

(*f*) In accepting the theory of the historical school of jurists, however, it is not necessary for us to give in our adhesion to what is called the historical method, as applied to other subjects—as, for instance, to political economy, or other branches of political science, including theoretical jurisprudence Thus applied, the theory, as I understand it, in effect denies the possibility of political or moral science, and, as commonly used—as, for instance, by *the historical school of political economists—seems to serve merely as a pretext for* repudiating the force and validity of logical reasoning In the true method, a thorough investigation of historical phenomena is, of course, essential, for the purpose, both of ascertaining our premises, and verifying our conclusions, but its fundamental principle is that the deductions of logic are absolutely certain, and that all true reasoning is apodictic or demonstrative, and that in this respect there is no distinction between mathematical reasoning and reasoning of other kinds At the same time, it is equally certain that conclusions thus reached are purely hypothetical, and must, therefore, depend for their absolute truth upon the truth of the premises, and the truth of these, of course, is always a matter of historical research The whole method of reasoning, therefore, is well expressed by Bacon in the well-known aphorism "The syllogism consists of propositions, propositions of words words are the signs of notions If, therefore, the notions which form the basis of the whole be confused, and carelessly abstracted from things there is no solidity in the superstructure, our only hope then is, in a genuine induction," (*Nov Org* , Bk 1 , Aph 14)

CHAPTER V

THE SUBJECT OF JURISPRUDENCE CONTINUED AND HEREIN OF THE DOCTRINE OF NATURAL RIGHT

§ 47 *Of Prevailing Misconceptions as to the Nature of Natural Right*

The subject of natural right is one of fundamental importance, and as many erroneous notions prevail with reference to it, it will require an extended consideration

The term natural right, or natural law is a mere translation of the *jus naturale* of the Roman lawyers, and in the Latin, the term *jus naturæ* is precisely equivalent, but these terms are commonly translated by us by the expressions, ' natural law " and the law of nature and, consequently, the same ambiguity, as in the case of the law, is presented Hence, the modern English jurists having no other conception of law than as being merely legislation, suppose that the term law is here used in the same sense and that to account for the existence of natural law or the law of nature, a legislator must be supposed (*a*) But obviously the Roman lawyers, in speaking of natural law (*jus naturale*) which they defined as the law, or *jus*, ' which natural reason has established among all men,' did not use the term law or *jus*, in the sense of legislation or conceive that a legislator was implied by it nor, so far as I know, has any one other than the Austinian jurists, ever done so

On the contrary, all that is implied by the term natural right—which is but another expression for right reason—is that there are certain natural principles, governing the jural relations of men, determined or established by reason (*b*)

Another very common error with regard to the nature of natural right as conceived by the Roman jurists, regards it as derived from the confessedly fictitious notion of a state of nature, or of natural society existing without government This is the notion of Sir Henry Maine, who is commonly regarded by English jurists as having finally established the true theory of jurisprudence, by modifying in some essential particulars, that of Austin, and whose views, on account of the reputation of the writer, are given at length in the note (*c*) But this notion is altogether without foundation The Roman doctrine of the *jus naturale*, or *jus gentium*, as will be seen, originated with Aristotle, and that in his mind it had no connection with the impossible hypothesis of a state of nature is sufficiently shown by his definition of man as being by nature a political animal, and by his conception of natural right, or as he called it, the *nomos koinos*, or common law, as being part of the law of the State Which was also the view of the Roman lawyers, who, as the author him self states regarded the *jus gentium* or *jus naturale* as something belonging to the present something entwined with existing institutions And this also was the view of English lawyers prior to the advent of Bentham and Austin And of the truth of the doctrine which simply asserts that reason justice or right is part of the law no more striking proof can be given than is furnished by the observation of Sir Henry Maine himself on the part it performed in the development of the Roman law viz that the progress of the Romans in legal improvement was astonishingly rapid as soon as stimulus was applied to it by the theory of natural law and that he knew of no reason why the law of the Romans should be superior to that of the Hindus unless the theory of natural law had given it a type of excellence different from the usual one *

§ 48 *Statement of the Doctrine of Natural Right*

The doctrine of natural right simply asserts that there are certain principles of justice existing independently of human institutions by which the conduct of individuals towards each other and also that of the State ought to be regulated But this is also in effect to assert the existence of natural rights for the terms a right and justice are strictly correlative whatever a man may justly do that he has a right to do and hence the term rights taken collectively with reference to an individual, denotes merely the sphere or province within which he may act freely without injustice The relation of the two terms is therefore precisely expressed in the definition that justice consists in the observance of rights † And hence to assert the existence of justice is but another mode of asserting the existence of natural rights

Of the existence of justice and consequently of natural rights it is impossible to doubt The conviction of their existence is so universal so profoundly rooted in the belief and sentiments of mankind and so evidently a constant attribute of human consciousness that the argument in support of the proposition except to those who expressly or in effect deny it is hardly necessary and as to those a sufficient refutation of their views may be found in the logical defects of their own arguments to which we have adverted

To establish the doctrine of natural right affirmatively the most efficacious argument consists in the simple enumeration of the many familiar rights recognized in every system of law such as the right to personal liberty and security or as it may be more properly called the right of self ownership the right of property the right of husband in wife and parent in child and *vice versa* and other rights of ownership and rights of obligation, such as to the performance of contract and compensation or restitution in cases of delict all of which are simply natural rights recognized by the State (*d*)

The rights above enumerated are universally recognized in all civilized countries and are in fact as susceptible of demonstration as the propositions of Euclid but it will be sufficient for our present purpose to establish this with reference to one of them only viz the right of self ownership or of personal liberty or security from which all others are derived This right is obviously essential not merely to the welfare or happiness but even to the existence of the individual and is therefore to be admitted nor can it be denied without absurdity for the question in its ultimate analysis may be reduced to this simple dilemma Does a man belong to himself or to somebody else? And obviously the first alternative must be accepted unless the second can be established and to establish the second it is necessary affirmatively to show who is his master If any one he is a slave and it will make but little difference to him whether his master be another individual or the State or rather the individual or individuals who for the time being wield the political power of the State (*e*)

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* *Ancient Law* p 75

† *V infra* p 299

Hence as we have observed it is a proposition universally accepted that the principal end of the State is to cause justice to be observed or in the language of the Constitution of the United States to establish justice Hence as we have also observed the difference between theoretical and positive right or right as actually established under a given system of positive law is merely the difference between the theory of rights and its attempted realization a difference not essential but accidental merely and which is in fact much less considerable than is commonly supposed *

This proposition which it will be perceived is of fundamental importance cannot as we have observed be denied without denying also the existence of natural rights and accordingly it is in fact not denied by the jurists of any school except that of Austin who at the same time denied the existence of rights and of justice otherwise than merely as creatures of the governmental will but in this they are guilty of asserting not merely a false proposition but a logical absurdity for these jurists like others have their theory of morality viz the principle of utility and thereby assert the existence of moral distinctions and consequently the existence of a distinction between the just and unjust which are but species of right and wrong for to assert that certain acts of men are just and certain others unjust is but to assert that within the sphere of action defined by the former class of acts men ought to be permitted to act freely, or in other words that it is right that such liberty be accorded to them But as we have seen this liberty to which every man is justly entitled, is but another name for the aggregate of what are called his rights, and hence to assert the existence of any principle of morality whatever, whether that of utility or any other is *ex vi termini* to assert the existence of rights and to deny the latter is in effect to deny the existence of morality including even the special form of morality asserted by them, the principle of general utility Hence, as the jurists referred

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*See opinion of Leibnitz *infra* p 299

to though denying the existence of natural rights do not in general differ from the rest of mankind in admitting the existence of moral distinctions they are clearly guilty of logical inconsistency and this indeed is the only plea upon which they can be acquitted of the graver charge of being in theory the enemies of Justice and of Morality

§ 49 *Of the Relation Between Natural or Theoretic and Positive Right*

Thus far the doctrine is sufficiently plain and is in fact generally admitted Nor can there be any doubt that there is a necessary and essential connection between natural or theoretic and positive right but the more difficult problem remains to determine the precise nature of the relation between them This problem the complete solution of which is just now the great desideratum of jural science is too extensive to be adequately treated here but the general nature of the relation may be readily explained

(1) This relation may be expressed by saying that the principles of natural right so far as they are determinate and are known to and recognized by the people generally or in other words so far as they are expressed or manifested in the general conscience or positive morality of the people constitute a part of the law by which is meant that they constitute not merely the material out of which or the norm after which the law is fashioned or made as is the opinion of Austin and others but an integral or component part of the law in the same sense precisely as do statutes and customs

(2) With reference to public right or the rights of the State this is sufficiently obvious for with regard to the State no other law can be conceived of as governing it than natural right or justice and without this as we have observed it is impossible to show that the State has any rights or that any one is under obligation to submit to its power Nor is this proposition inconsistent with the acknowledged existence of unwritten constitutional law and of international law for these are but terms denoting the law of nature or natural right as applied to the internal and the external jural relations of State nor can any other definition be conceived of They are either this or they are not law and unless the former the latter proposition which is the doctrine of the Austinian jurists must be accepted These jurists are indeed right in asserting that both constitutional and international law are merely positive morality but this is merely to assert that positive morality or rather that part of it that is called positive right is in effect law

It may indeed be said and the proposition cannot be disputed that both laws are based largely upon custom or as it is called with reference to the latter the usage of nations (*f*) But as we have seen custom does not of itself constitute law it is law only to the extent that reason or natural right determines it to be so for it is a received principle of jurisprudence that the unreasonable customs carry with them no obligation

So also with reference to contract or convention of which it is said international law largely consists these are binding only because it is a principle of natural right that they should in certain cases be observed Hence contracts like customs are mere elements in the problem of international or constitutional right and ultimately depend for their validity upon the principles of natural right or justice

Especially are these observations true with reference to the theory of the State the subject of our present investigations for here obviously we have to deal exclusively with theoretical right unembarrassed by the consideration of contracts customs laws or other historical facts except in the abstract as elements of the problem

(3) But with reference to private right the question is more complicated for here we have to take into consideration not only customs but also judicial decisions and statutes or legislative acts and these present questions of great difficulty which cannot here be considered at length

It will be sufficient however for our purposes to say with reference to judicial decisions or precedents that they are but a species of custom and rest for their binding force upon the same principle and with reference to statutes or legislative acts that they are but the acts of men and like contracts or other human acts derive their authority solely from the right of the men enacting them to dispose of the subject matter to which they relate if within the right of the legislator they are valid and otherwise not Hence statutes and judicial precedents like the acts of private individuals and customs are mere elements in the problem of private right and ultimately depend for their validity upon the principles of natural right and can have no other foundation and hence to assert their validity is in effect to assert the existence of natural right Hobbes is therefore right in asserting not only that the law of nature is a part of the civil law of all the commonwealths of the world but that reciprocally also the civil law is a part of the dictates of nature, for as he says justice that is performance of covenant and giving to every man his own is a dictate of nature and every subject in a commonwealth hath covenanted to obey the civil law Hence he says The civil and natural laws are therefore not different kinds but different parts of law whereof one part being written is called civil the other unwritten natural *

Of the truth of our proposition that natural law is part of every system of positive law or in the words of Hobbes that it is a part of the civil law of all commonwealths of the world there cannot therefore be any doubt and the chief difficulty of men in conceiving it is in the failure to observe that what we call the law consists of several essentially different parts These consist of the criminal and the civil law and the latter of the law of civil procedure and the law of private right and the last, again of the doctrine of rights, or, as we may call it right and of the

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* *Lev* 124

doctrine of actions, or remedies for the enforcement of rights Right or the doctrine of rights, as we have defined it constitutes the substantive part of the law, for which all the other parts exist, which accords with the division of the law by Bentham into substantive and adjective law Our proposition is to be understood, therefore, as asserting simply the identity of the substantive law, or the doctrine of rights, with natural right and the correctness of our reasoning may be very readily verified by comparing the different systems of law prevailing in modern Europe, in all of which the substantive part of the law, or the doctrine of rights, will be found to be substantially identical so that a man may travel throughout all the countries of the civilized world, without finding his rights substantially varied Everywhere, his rights to personal liberty and security, to his property to the payment of debts due him and the performance of other contracts and to compensation or restitution in case of delict and in short, his rights generally, as enjoyed by him at home, will be recognized

(4) This view of the nature of the private right is in fact, verified by the early history and the subsequent development of every system of law In all countries, positive law commences merely with the establishment of a jurisdiction, or power to declare justice, or right, (in the words of Magna Charta, *justitiam vel rectum*) in controversies presented for decision, and the law of private right consists merely of the principles of justice, or natural right, which of course, includes the observance of existing customs Afterwards the law is modified by new customs and especially by the custom of the courts, or judicial precedents, but it is only at a later period and until modern times very sparingly, that the law of private right is materially affected by legislation In the beginning as justly observed by Sir Henry Maine legislation is an unknown phenomenon "It is curious," he says, in a passage already partly quoted, "that the further we penetrate into the primitive history of thought the further we find ourselves from a conception of the law which at all resembles a compound of the elements which Bentham determined It is certain, that, in the infancy of mankind, no sort of legislature, nor even a distinct author of law, is contemplated or even conceived of," and he adds, "Zeus, or the human king on earth is not a law maker, but a judge" *

From this beginning, it is a well known historical fact, that both in our own and in the Roman system, the law has been developed mainly by the decisions of the courts, and is therefore an expression, not of the will, but of the judgment, or conscience, of the State In this development, legislation, until recently, has had but little part, and it is to be regarded, not as an essential or necessary element in the law, but merely as a means of modifying its natural development

The truth of the theory of the Historical School of jurists—as applied to positive jurisprudence—must therefore be admitted by all who are familiar with the law and those who are not thus familiar may readily satisfy themselves of the proposition by referring to the list of rights that we have given above Those as we have observed are not only susceptible of demonstration but are universally received in all civilized countries and the principles by which they are determined are in fact recognized everywhere as part of the positive law So that to this extent in the modern European world the dream of Cicero is fully realized *Non erit alia lex Romae alia Athenis alia nunc alia posthac sed et apud omnes gentes et omnia tempora una eademque lex obtinebit* And in this general recognition of natural rights is to be found the essential characteristic of our advanced civilization Nor is it extravagant to say that this is a law written by the finger of God or for those who prefer the expression by the finger of nature upon the heart of man—not meaning thereby that it is written upon the heart of each man so as to be discerned without reasoning but that it is the nature and constitution of man in the progress of civilization to recognize and understand it

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* *Ancient Law* chap 1

(5) Our proposition it will be observed asserts that natural right constitutes an *integral* part of the actual law of every country Those therefore who regard it merely as the material out of which or the *norm* after which the law ought to be fashioned in effect deny the proposition and also in effect deny the existence of natural right which from its essential nature must be regarded as asserting its own paramount obligations over government as well as over individuals But to this class belong many of the theoretical or philosophical as distinguished from the historical jurists of modern Europe These accept the doctrine of natural right without reservation but owing to their want of familiarity with the positive law or to other causes do not seem fully to have grasped its significance The true expression of the doctrine I repeat is that justice or natural right so far as its principles are determinate constitutes in every commonwealth not merely an ideal to be attained by legislation but an integral or component part of the actual or positive law of the land as binding on the courts and the State generally as any other part of the law and that its violation by either is not only unjust but unlawful and that this is to be understood not merely as a philosophical theory but as a received principle of every system of positive law But the writers referred to while in some respects expounding admirably the principles of natural right and showing by actual demonstration their clear and definite character seem to assume that they are not in fact law and can become law only by some sort of legislative transmutation

Thus Kant—in his celebrated definition of the several powers of the State namely the *legislative* the *executive* and the *judiciary* powers which we have already quoted—in effect asserts that the law is altogether the expression of the will of the legislative power And so Bluntschli referring to the theory that the State should be merely a *legal* State (*rechts stat*) i e that its functions should be confined merely to the administration of justice says that in such case the State would at last become a mere institution for administering justice *in which the legislative power would establish the legal rules* and the judicial power would protect them and apply them to particular cases which is in effect but a different expression of the proposition asserted by Kant And the same prejudice seems to be entertained by many other writers (*g*)

But obviously in this they are inconsistent for nothing can be clearer than the two propositions—one of principle the other of fact first that if there are any principles of natural right sufficiently definite and sufficiently known to be observed it is right that they should be observed and secondly that in fact they are substantially observed in all systems The true test or criterion of the *jural* or legal nature of such principles therefore is not the will of the legislator but general recognition by the people when they are thus recognized they become *ipso facto* part of the law Hence it is a principle universally received by jurists that custom is part of the law and that in fact the law consists mainly of customs

(6) This is the doctrine of the so called historical school of jurists of whom the most distinguished representatives are Hugo and Savigny and which indeed is but a formulation of the views of practical jurists generally According to this doctrine as expressed by Mr Ahrens the source of right (that is positive right or the law) is placed not in the individual reason but in the national conscience as successively existing in history * And this is unquestionably the true doctrine For to be observed as a common rule obligatory upon all the principles of right must be generally recognized and hence such general recognition constitutes the test or criterion by which the principles of positive right are to be distinguished The proposition however it will be observed does not assert that the general recognition of a given principle as a principle of natural right necessarily makes it such The general consensus of the moral convictions of men derives its authority partly from the necessity of observing custom but chiefly from the presumption it gives rise to that it is in fact right But it is within certain limits competent for the legislature to entertain the question whether the principle asserted be true and if not to correct it And this in general equally belongs to the function of the judge—the only restriction upon him being that he is bound to decide not according to the exigencies of the particular case but according to the effect of the rule And this accords with the principle explained in a former chapter that the interference of the State should not be extended to cases where the desired end may be effected by the spontaneous action of natural social forces

(7) Hence to sum up the argument if it be true as we have sufficiently

* *Cours de Droit Naturel* p 22

established, that in every society or State a body of principles governing the jural relations of men, or, in other words, a system of private right, is naturally and spontaneously developed, and that these principles are, in the main, rational and just, and are generally recognized, not only by the particular people, but by all peoples of the same grade of civilization, and to a considerable extent by all peoples, civilized and uncivilized, and that such principles are universally regarded by the people as the criterion by which their just rights are to be determined, and if it be further true that no government is strong enough to disregard, except to a limited extent, these jural convictions of the people, or to violate the rights believed by the people to be guaranteed by them, and that in fact all governments hold their power, and even their existence subject to the condition of substantially observing them, then it must inevitably follow, first, as a historical fact, that these principles, so far as they are thus recognized, must be and in fact are, in theory recognized and in practice substantially observed by all States, and hence constitute an integral part of the law, and secondly, that this is not an accidental but a necessary fact or phenomenon resulting from permanent laws of human nature, to which philosophy must conform itself

I have dwelt largely on this point because, though the proposition contended for is obvious and simple, there seems to be an inveterate prejudice to the contrary, from which even those who have convinced themselves over and over again of its falsity can hardly escape Hence, whenever I assert the doctrine in explicit terms, I am conscious that, to many readers, it will appear paradoxical, and I have, therefore, being convinced that herein must consist the first step in the intelligent study of political science, labored with anxious care both here and elsewhere throughout the work, and at the risk of tediousness, to establish the true doctrine of natural right, both directly by demonstrating its abstract truth, and by showing it to have been substantially realized in every system of law, and indirectly by demonstrating the absurdity of every conceivable contradictory theory For, as in the past, the noble development of jurisprudence as exemplified in the Roman and in the English law was due entirely to the acceptance and application of this doctrine, so the present state of stagnation into which it has fallen is to be attributed to its neglect, nor in my opinion is there any hope of a revival either of jurisprudence or political science generally, until the doctrine of natural right, as above explained, is again received and assigned to its proper place.

§ 50. *Historical View of the Doctrine of Natural Right.*

The theory of natural right, and its existence as an integral part of the law, has been uniformly recognized by the jurists of all ages and countries, with the exception of Austin and the modern English jurists

(1) It is clearly and forcibly expressed by Aristotle, who may be

called the first and one of the greatest of jurists In his view (as we have seen) man is by nature a political animal and hence his natural state is in society Hence *political* justice—by which term he denoted the justice obtaining between the citizens of the State and which he defined as consisting in conformity to the law (or *nomos*) of the State—is in fact the only justice For he says the term justice implies the case of those who have laws (*nomoi*) to which they are subject * and hence justice can exist only in the case of those between whom laws exist or in other words between men in society In his view therefore the terms justice and the law (*nomos*) connote the same essential idea and differ only in this that the one denotes the rule and the other conformity to the rule as is in effect asserted in his proposition that the administration of law is the determination of *the just and the unjust* † or in other words the administration of *justice* Having thus identified political justice with the justice actually existing in and enforced by the State or in other words the law he proceeds to say that it is partly *natural* and partly *legal* To use his own language

Of the political just one part is natural and the other legal The natural is that which everywhere is equally valid and depends not upon being or not being received but the legal is that which was originally a matter of indifference but which when enacted is so no longer as the price of a ransom being fixed at a *mina*, or the sacrificing a goat and not two sheep and further all particular acts of legislation as the sacrificing to Brasidas and all those matters which are the subjects of decrees ‡

And in the *Rhetoric* a precisely corresponding division is made of the law Let the acting unjustly he says 'be defined as the voluntary commission of hurt in contravention of law Now law is either *common* or peculiar *nomos koinos* or *nomos idios* The peculiar law I call that by whose written enactments men direct their policy the common law whatever unwritten rules appear to be recognized among all men §

And in another place the same idea is thus more fully expressed Law now I understand to be either *peculiar* or *common* (*idios* or *koinos*), the peculiar to be that which has been marked out by each people in reference to itself and this is partly written and partly unwritten (*h*) The common law I call that which is conformable merely to the dictates of nature For there does exist naturally a universal sense of right and wrong, which in a certain degree, is intuitively divined, even should no intercourse with each other, nor any compact have existed which sentiment the Antigone of Sophocles enters uttering that it was just, namely to bury Polynices, though forbidden, since by nature, this was a deed of justice, for, by no means, is it for this or the next day merely that this maxim is in force, but forever, nor is there any one that knows from whom it proceeded And as Empedocles says on the subject of not slay ing that which has life, for this is a maxim not right here nor wrong there, but a principle of law to all" (i)

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* *Ethics* Bk v Chap vi fol 4

† *Id* Bk v Chap vi, fol 4

‡ *Id* Bk v Chap vii fol 1

§ *Rhetoric* Bk 1 Chap x, fols 2 3.

(2) The distinction made by Aristotle between the common and the peculiar law (*nomos koinos* and *nomos idios*) was adopted without change by the Roman jurists who regarded the law as consisting of two parts namely, the *jus gentium* or *naturale* and the *jus civile* "Every people," they say "uses partly its own peculiar law (*jus*) and partly the law common to all men For that law which each people has established for itself is peculiar to it and is called the *jus civile* as being peculiar to the State in question but that which natural reason has established among men is observed generally among all people and is called the *jus gentium* as being the law which all nations use" *

The same notion is also embodied in their definitions as given in the works cited in note (j)

(3) It was to this conception of *jus* that the Roman law owed the rational character of its development, which in fact commenced with and was in a large measure due to the adoption of the Greek philosophy by the Roman lawyers Hence the Roman law is to a great extent, to be regarded as Celsus says of it, as "a true philosophy" or, in other words a "body of reasoned truth" which is the view taken of it by Leibnitz, who was at once philosopher and jurist and whose opinion is therefore entitled to the highest consideration (k)

(4) The doctrine of natural right, and of its existence as part of the law, was received by the different countries of Western Europe along with the whole body of the Roman law and so far as my knowledge extends has never been disputed by the continental jurists It was also adopted by the jurists of the common law and until the advent of Bentham and Austin, was universally received

(5) On this point the only difficulty arises from the exuberance of the authorities Bracton quotes literally the passages I have cited from the Roman jurists adding much to the same effect of his own

'Jurisprudence,' he says, "differs much, therefore, from justice for jurisprudence recognizes, and justice gives what is due to every one Justice, therefore, is the virtue, jurisprudence the science, justice the end, jurisprudence the means" †

The doctrine of natural right as part of the law is also explained at great length by Fortescue, *De Laudibus Legum Angliæ* ‡ also by St Germain § and Fleta, and finally by the great master of the common law, Coke, who asserts explicitly that "the law of nature is part of the law of England," and, defines it, in the words of "Aristotle, *Nature's Secretary*, as that *quod apud omnes homines eandem habet potentiam*", and 'herewith agreeth," he says, Bracton, Lib 1 Chap v, and *Dr and Student* Chaps v, vi, "And this appeareth plainly and plentifully in our books "‖ And to the same effect are numerous other passages hereafter cited

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* *Pandects and Inst. of Justinian*

† Bk 1, Chap iv, § 1-4.

‡ Chap 1, 15 16

§ *Doctor and Student passim*

‖ *Calvin's Case*, 7 Rep, 12 13

In this way only can be explained the notorious fact that, in spite of the avowed hostility of the English people to the Roman law, the English lawyers from the time of Glanville to the present day, have freely borrowed from its principles (*l*)

The same process took place on the continent and resulted in the establishment of the Roman law as the common law of Europe—a fact, it would seem more calculated to surprise than its partial adoption in England In the latter country the process was, at a period subsequent to the time of Bracton * checked by the hostility of the English people to the Roman law but the only result was that the process was transferred from the common law courts to the court of chancery where it went on unchecked In modern and more enlightened times the common law judges again commenced to borrow freely from the civilians It is related of one of the greatest of our jurists Sir Matthew Hale, that "he applied himself with great avidity to the contemplation of the Roman law,' and that he often affirmed that the principles of jurisprudence were so well delivered in the *Digests* that law could not be understood as a science without first resorting to them for information † (*m*)

Nor, as we have observed, can any one even slightly familiar with the two systems fail to perceive the entire identity of principle and method of those portions of the two systems that deal with the determination of rights and the substantial identity of rights themselves as realized in all civilized nations

(6) Two distinctions however are to be drawn between the English and the continental jurists The Roman law was inherited by the latter from a corrupt and degenerate age, after its spirit had fled, and the rational method, by which it had been developed, had ceased to operate, and its general reception on the continent in its complete form, as part of the positive law, has given to it an undue authority Hence, the genius of the continental jurists seems to a certain extent to have been cramped or fettered by the authority of Justinian's collections in the same manner as, in other branches of philosophy, thought has been dominated by the authority of the Church, and, accordingly, it has been well remarked that "the fruits to be obtained from the study of the Roman law can be reaped to their full extent only in countries where it is not allowed the force of law,' ‡ as is the case in England

On the other hand, jurisprudence has been cultivated in England in the main, only by professional lawyers, for purposes of the practical administration of justice while on the continent, it has fallen into the hands of jurists, devoted exclusively to its theoretical study, or of philosophers, and hence, has resulted a (to us) humiliating superiority in the exposition of the law, and of the philosophy of the law, on the continent Still, admitting this superiority, it may be said of continental jurisprudence, that it has been cultivated of late years too exclusively either by professional jurists or by philosophers unfamiliar with the details of the law and hence the following strictures of Bacon may be applied to them as well as to ourselves

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* *Calvin's Case* 346

† Hale's *History of the Common Law*, 111

‡ Kaufman's *Mackeldey*, Translator's Preface, 7

' All who have written concerning laws have written either as philosophers or lawyers The philosophers lay down many principles fair in argument but not applicable to use the lawyers being subject and addicted to the positive rules either of the laws of their own country or else of the Roman or pontifical law have no freedom of opinion but, as it were walk in fetters * Pantagruel expresses the same opinion of the French lawyers in somewhat more forcible language Seeing ' he says that the law is excerpted from the very bowels of moral and natural philosophy how should these people know the law? who by have read no more in philosophy than my ass

NOTES

(a) Thus Bentham regarded the expressions the law of nature and natural rights as purely metaphorical The primitive sense of the word law he says under ordinary meaning of the word is the will or command of the legislator The law of nature is a figurative expression in which nature is represented as a being and such and such a disposition is attributed to her which is affirmatively called a law Natural rights are the creatures of natural law They are a metaphor which derive their existence from another metaphor And he adds In this anti legal sense the word right is the greatest enemy of reason and the most terrible destroyer of governments There is no reasoning with fanatics armed with natural rights (*Principles of Legislation*)

Austin also while admitting the possibility of a natural law enacted by the Creator in effect denies that it could be known to us except through the commands of the government and thus practically arrives at the same conclusion

(b) Hence as observed by St Germain *Doctor and Student* pp 11 and 12 it is not used among them that be learned in the laws of England to reason what thing is commanded or prohibited by the law of nature and what not but when anything is grounded upon the law of nature they say reason will that such a thing be done and if it be prohibited by the law of nature they say that it is against nature or that nature will not suffer it to be done And the same view is asserted by Coke in his celebrated saying that *Nihil quod est contra rationem est licitum* and that the common law itself is nothing else but reason (*Co Litt* 976) and by Mansfield more accurately in the definition that it is nothing else but reason modified by habit and authority and by Burke in saying that it is the collected reason of ages containing the principles of original justice with the infinite variety of human affairs

(c) After nature had become a household word in the mouths of the Romans the belief gradually prevailed among the Roman lawyers that the old *jus gentium* was in fact the lost code of nature by which nature had governed man in the primitive state Roman jurisconsults in order to account for the improvement of their jurisprudence by the prætor borrowed from Greece the doctrine of a natural state man—a natural society anterior to the organisation of commonwealths governed by positive law And again The law of nature confused the past and the present logically it implied a state of nature which had once been regulated by natural law Yet the juris consults do not speak clearly or confidently of the existence of such a state which in deed is little noticed by the ancients except where it finds a poetical expression in the fancy of a golden age Natural law for all practical purposes was something belonging to the present—something entwined with existing institutions something which could be distinguished from them by a competent observer The test which separated the ordinances of nature from the gross ingredients with which they were mingled was a sense of simplicity and harmony yet it was not on account of their simplicity and harmony that these finer elements were primarily respected but on the score of their descent from the aboriginal reign of nature This confusion has not been successfully explained away by the modern disciples of the jurisconsults and in truth modern speculations on the law of nature betray much more indistinctness of perception and are vitiated by much more hopeless ambiguity of language than the Roman lawyers can be justly charged with (*Ancient Law*)

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* Bacon s *De Aug* 8 3

(*d*) Rights as we have explained are of two kinds viz rights of ownership and rights of obligation and the enumeration given in the text is therefore exhaustive

(*e*) It is said by Kant that this right is the one sole original inborn right belonging to every man in virtue of his humanity (*Phil of Law* p 56) but in fact from this right are derived all others This is admirably shown though with some error by Herbert Spencer in his *Social Statics and Justice* and is also treated in detail in Mr Smith's *Right and Law* Chaps vii and viii

(*f*) Accordingly the most approved definition of the Common Law uniformly asserted by English jurists from the time of Bracton is that it consists of the general customs of the realm or State (1 *Blacks Com* 64) In England says Bracton (Bk 1 Chap 1 § 2) the law (*jus*) has come without written enactment (*ex non scripta*) because use has established it In this sense the term Common Law is opposed by modern legal writers to statutory law Common Law is taken for the law of this kingdom simply as it was generally holden before any statute was enacted in Parliament to alter the same (Jacobs *Leg Dict*) The Common Law is that which derives its force and authority from the universal consent and immemorial practice of the people It has never received the sanction of the legislature by an express act which is the criterion by which it is distinguished from the statute law (Bouvier *Law Dict*)

(*g*) Thus Mr Whewell (*Elements of Morality*) in his otherwise admirable chapter on Justice seems to assume this Though in general he says (Sect 489) Justice is determined by law the law must be framed in accordance with justice Justice is directly and positively determined by law for a man's just rights are those which the law gives him The law must be framed in accordance with justice and must therefore reject all that is arbitrary and unequal as soon as it is seen to be so The defect of Mr Whewell's views is he fails to grasp the true nature of the relation between natural right and law which is that the former is part of the latter

(*h*) There will be noted a discrepancy between this proposition and the one immediately preceding in the one the *written law* is described as commensurate with the *nomos idios* and the *unwritten* with the *nomos koinos* or common law in the other the *nomos koinos* is said to be partly *written* and partly *unwritten* The latter is the true view and conforms to the distinction made in the Roman law and in our own between the *lex scripta* and the *lex non scripta* and also to the distinction made in our law between the common and the statute law

(*i*) See further on this point *Elements of Civil Law* in the chapter on The Law of Nature by Dr Taylor who after quoting the language of Aristotle says These are the very words of the emperor *Omnes populi qui legibus et moribus reguntur partim suo proprio partim communi omnium hominum jure utuntur* This twofold division of the law he adds as it is the earliest so it is perhaps the best and has been generally received by lawyers and philosophers

Sir Frederick Pollock very strangely mistakes the position of Aristotle upon this point "Aristotle," he says, "struck out a new and altogether different part *In the first place he made the capital advance of separating ethics from politics* Not only is this not done in the Platonic writings, but the very opposite course is taken in the Republic Man is represented as *a microopolis*, and the city is the citizen *writ large* (*History of the Science of Politics*, p 7)

The views of Aristotle as expressed in the above quotations, are directly to the contrary, and it may be added that the Platonic view of the subject objected to by him has also been very generally received by modern European publicists (*v* Ahrens, cited *supra*), (*Id*, Bk 1, Chap xiii, Vol 2)

(*j*) *Justitia* (*i e*, the virtue) *est constans et perpetua voluntas jus suum cuique tribuendi*

Hence abstract or, as it is called by Aristotle, political justice, consists in rendering to every man his right (*jus suum cuique tribuendo*)

Jurisprudentia est *Justi atque injusti scientia.* "*Jus* ' says Celsus, "is the art of the good and the equal—*ars boni et æqui*, of which some one deservedly calls us the priests for we administer the cult of justice, and profess the knowledge of the good and the equal, separating the equal from the unequal and distinguishing the right from the wrong *following unless I am deceived, a true, and not a pretended* philosophy The precepts of *jus* are to live decently, to hurt no one, and to give every man his own (*honeste vivere alterum non lædere suum cuique tribuere*)

' *Jus civile* is that which neither recedes altogether from the *jus naturale* or *jus gentium* nor altogether follows it. Therefore when we add anything to or detract anything from the common law (*jus commune*), we make a peculiar law, *jus proprium*, or *jus civile* ' And it is added Almost all contracts were introduced from the *jus gentium* as for instance, buying selling letting, hiring partnership deposit, loan and other unnumerable

"This law of ours is partly written, partly unwritten, as with the Greeks the laws (*nomoi*) were written or unwritten

" The written law (*jus scriptum*) consists of the several kinds of statutes (*leges*, *plebiscita*, *senatus consulta*, *principum placita*), of the edicts of the magistrates or judges, and the opinions of the learned in the law (*responsa prudentum*)

' The unwritten law is that which custom has approved.

' The principles of natural right (*naturalia jura*) which are observed equally among all peoples being established by a certain divine providence remain always firm and immutable but those which each State has established for itself are often changed, either by the tacit consent of the people or by some later law

Compare Coke, Calvin's Case, Rep 25

"*Leges naturæ perfectissimæ sunt et immutabiles humani vero juris conditio semper in infinitum currit, et nihil est in eo quod perpetuo stare possit, leges humanæ nascuntur, vivunt et moriuntur* "

(*k*) "I have often said, that after the writings of the geometricians there exists nothing which, in point of strength, subtilty and depth, can be compared to the works of the Roman lawyers and, as it would be scarcely possible from intrinsic evidence to distinguish a demonstration of Euclid's from one of Archimedes or Apollonius (the style of each of them appearing no less uniform than if reason herself were speaking through her organs), so also the Roman lawyers all resemble each other, like twin brothers, insomuch from the style alone of any particular opinion or argument hardly any conjecture could be formed about its author nor are the traces of a refined and deeply meditated system of natural jurisprudence anywhere to be found more visible or in greater abundance And even in those cases where its principles are departed from, in compliance with language consecrated by technical forms, or in consequence of new statutes or of ancient traditions, the conclusions which the assumed hypothesis renders it necessary to incorporate with the eternal dictates of right reason are deduced with a soundness of logic and with an ingenuity that excites admiration Nor are these deviations from the law of nature so frequent as is commonly supposed "

This passage is quoted by Dugald Stewart (*Philosophy of the Human Mind*, II, III, 3), who, while admitting Leibnitz to be good authority, finds it difficult to accept his opinion.

(*l*) The most striking illustration of this fact is furnished by the treatise of Bracton, with reference to which Sir Henry Maine makes the following observation: "That an English writer of the time of Henry III should have been able to put off on his countrymen as a compendium of pure English law a treatise of which the entire form and a third of the contents were directly borrowed from the *corpus juris*, and that he should have ventured on this experiment in a country where the systematic study of the Roman law was formally proscribed, will always be among the most hopeless enigmas in the history of jurisprudence" (Maine's *Ancient Law*, Chap. iv.). It must, indeed, be hopeless to reconcile this fact with Mr. Maine's, or rather, Austin's and Bentham's theory of the law; but, in the light of the true theory, there is nothing in it to surprise us. It was the function of the judges to administer justice, and their duty, at least, in the then condition of the law, to seek the principles of justice where they could best find them, namely, in the Roman law. "What is good sense in one age must be good sense, all circumstances remaining, in another, and pure, unsophisticated reason is the same in Italy and in England, in the mind of a Papinian and of a Blackstone" (Sir William Jones' *Bailments*, Introduction).

"To have neglected to take advantage of the assistance which was then offered would have argued a high degree of presumption, or gross and culpable ignorance, neither of which is to be imputed to the founders of our system of jurisprudence" (1 Spence's *Eq. Jur.*, 123).

(*m*) For a fuller account of the influence of the Roman upon the English law, see observations of Spence, 1 *Eq. Jur.*, pp. 108, 109, 122–124, 131, 132, 224, 234, 235, 285, 286, 346, 347. Mr. Markby, in his late work, *Elements of Law*, takes a different view, but in this he is clearly wrong.

CHAPTER VI

Of the Rights or Just Powers of the State

§ 51 *Of the State as a Body Politic or Corporation*

The rights of the State have already been incidentally but extensively discussed in the progress of our work, so that but little remains except to summarize what has already been said.

The notion of a right or of an obligation implies some person or persons in whom it exists. Hence public rights or rights of the State are in fact rights of the individuals who compose it, differing from individual rights only in being common to all; and the same is true in Private Right of all rights vested in classes of individuals regarded as aggregates (*universitates*), as for instance in the case of an ordinary business corporation, which exists merely for the benefit of the stockholders, and is merely an instrument or organ for exercising more efficiently their individual activities, and whose rights obviously are merely their rights. But for purposes of expression this view of rights and obligations as vested in actual persons, though true, is with reference to rights vested in classes of individuals an extremely inconvenient one; and on this and on other accounts it has become necessary to invent what are called collective names, such, for instance, as a flock of sheep, a library, a regiment, etc., by which all the individuals included under the name are, figuratively speaking, unified or regarded as one. This one or unit is generally conceived to be a thing, as in the instances above given, and this for ordinary purposes is sufficient; but when we have to express the moral relations of men—their rights and obligations, their duties, their virtues, or other moral qualities—it becomes necessary to conceive of it as a person—for it is in persons only that moral qualities can reside.

Hence in the Law it has become necessary, for the purpose of dealing more conveniently with rights and obligations, to invent the notion of a *juridical* (*a*) person, or, as it is more commonly called with us, a body politic or corporation, which is a fictitious or imaginary person, said to be created by fiction of law.

Of corporations the most perfect type is a State. For that exists naturally, as an inevitable consequence of human nature, and therefore presents an instance of a permanent organization analogous in many particulars to the actual human being. But nevertheless it is of the utmost importance that it always be borne in mind that its personality is merely fictitious, or imaginary, and that when we speak of its rights and obligations it is a mere convenient expression for those of its citizens.

From the neglect to observe this obvious truth many errors have resulted and indeed it would be almost impossible to instance all the false and pernicious conclusions which have been drawn from this analogy—as for instance that of Kant Rousseau and numerous others to which we have alluded that the State has a will which must be regarded as the united will of the individual members of the community which involves a double fiction namely the obviously false proposition that the wills of all the citizens may be in fact united or rather chemically compounded, and the further proposition that they are vested in a personage as purely fictitious as the genii of the *Arabian Nights* And a still more remarkable instance is the *organic* or *psychological* theory of Bluntschli—already reviewed in the preceding pages of this work—which in effect regards the State as an actual *organism* or organic being having will intelligence and parts like the actual man and in which numerous functions are assigned to the State, many of which are illegitimate and some impossible

On this account in adopting the use of the term the *organic* theory * I spoke of it as not altogether appropriate For while the terms organize and organization are commonly applied to bodies of men as when we speak of organizing a meeting or a government the term organic has acquired a narrower meaning as denoting merely an organic being either animal or vegetable—a sense which it is necessary altogether to repudiate in speaking of the State It will therefore be understood throughout this work that in applying the term *organic* to the State we use it not as denoting an animal or vital connection between its different parts or as implying that the State is in any sense a living man with intelligence or will but simply as denoting a permanent composite naturally existing whole which in many respects bears a close analogy to an organic being in the narrower and stricter sense

§ 52 *Of the Distinction Between the Internal and External Rights of the State and Herein of International Right*

In considering the rights of the State it is to be first observed that the State occupies two distinct relations viz the one towards its subjects the other towards other States Accordingly the rights of the State are to be divided into two classes namely its *internal* and its *external* rights The former belong peculiarly to the subject of the present work, the latter to an independent though closely related science known as the Law, or more properly the *Right of Nations* (*jus gentium*) or as in modern times it is more commonly called, International Right or Law

It is one of Austin s tenets generally received by the later English jurists that international law or right is not law in the true sense, and this conclusion—as we have observed—necessarily follows from his definition of the law, as being merely the expressed will of the State on which, as we have seen, his theory wholly rests And hence according to this view International Law or Right is nothing more than positive morality The last proposition is indeed undoubtedly true but it is equally clear as we have seen that his definition of the law is untenable and that his conclusion that International Law or Right is not law in the true sense cannot be sustained On the contrary it constitutes a system of law or right essentially similar in its nature and in its general principles and method to the Law of Private Right or rather to that portion of the Law of Private Right which consists of the doctrine of *rights* as distinguished from the doctrine of *actions* which as we have seen consists merely of the principles of justice or natural right—including of course such arbitrary and accidental principles as are admitted by those principles Hence it must be said that not only International Right but Private Right also are in fact only positive morality for they both consist merely of the principles of natural justice as received in the general conscience and these constitute but a branch or division of positive morality

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* *Supra* p. 240

International Law therefore may be described as being merely an application of the principles of justice or natural right to the relations existing between different States regarded as juridical persons nor is any other conception of it possible The theory that conceives it to be based upon *custom* and also that which conceives it to be based on *convention* and in fine all other theories are necessarily included in this For each of these theories rests upon the assumption that justice or right demands the observance of the principle asserted i e the observance of *custom* or of *convention*—and hence as in the case of private law the practice of nations and treaties and other contracts are merely elements in the problem which in every controversy is simply to determine in view of these and all other circumstances what are the mutual rights and obligations of the parties

The doctrine of private rights, as observed in each State and the doctrine of international rights are therefore essentially the same and this was well and clearly conceived by the Roman lawyers in their conception of the *jus gentium* or *jus naturale* and by Aristotle in his conception of the *nomos koinos* or common law as including all those principles of natural right, or justice observed by men generally But in both cases as we have observed with regard to Private Right the principles of justice or natural right can become the practical standard only when generally received (*b*)

§ 53 *Of Private International Right*

Hence, the system of rules and principles known as private international law, and sometimes treated under the title, "The Conflict of Laws," is improperly so called This system may be described as including the rules and principles which govern the transactions taking place outside of the State, but presented to the courts of the State for determination Controversies with reference to such transactions are determined either by the law of the foreign State in which the transaction occurred so far as consonant with natural right and with the policy of the State exercising the jurisdiction or by principles of natural right The principal application of this jurisdiction is to the case of contracts which are said to be governed by the law of the place of contract (*lex loci contractus*) and to cases of succession but it is also applied to cases of trespass and other torts In all such cases the foreign law is applied not on the supposed ground of comity but because justice demands that it should be

With these few and simple considerations which have in England and in this country been greatly obscured by the prevailing theory and which are sufficient to give a clear and definite notion of the nature of International Law or Right we will now revert to our proper subject which is the internal rights of the State (c)

§ 54 *Of the Distinction Between the Political and the Non Political Rights of the State and Herein First of the Social Rights of the State*

The rights of the State may be divided into two general classes—namely those which pertain to the individuals composing the State and which differ from private rights only in being common to all and those which pertain to the State in its corporate capacity only The latter may be called the *political* the former the *non political*, or *merely social* rights of the State

The former class includes the right to the maintenance of the public peace and security and also to the preservation of the public morality For the existence of these rights is essential to the existence and well being of every individual in the community and they therefore exist in the State because they exist in each of the individuals composing it This is sufficiently clear with reference to the maintenance of the public peace and security and with reference to the observance of justice for without these social life would be impossible and it is equally clear that a decent observance of the received morality is to a certain extent demanded by the rights of individuals and that its open violation is in certain cases inconsistent with those rights For such violation of the principles of morality generally observed by the community would constitute what is technically called a nuisance and is as inconsistent with the comfortable enjoyment of existence and property and the free exercise of the faculties in the pursuit of happiness as a noxious smell or poisonous exhalation (*d*)

In this kind of rights is also included a certain right to the lands of the State which is violated by its unjust appropriation by individuals for without the right to a certain use of land the existence of the individual is impossible and it would seem also that there is a right to a certain equality of enjoyment in such lands But the latter right is in its nature indeterminate and can be realized only by the affirmative action of the State to which as in the case of all indeterminate rights, this function properly belongs

And generally the social or non political rights of the State includes all rights implied by the general right of the State to a free and natural development

The social rights of the State like private rights of ownership are fully effectuated by their mere exercise or enjoyment and so far as respected do not call for or admit of the intervention of the political power whose sole function with regard to them is that of protection Hence were it not for their liability to be violated or in other words were mankind uniformly just and voluntarily disposed to observe them private and social rights would include all rights whatever

§ 55 *Of the Political Rights of the State*

Hence the political rights of the State as we have seen spring from the necessity of an organized force to protect private and social rights and they may therefore all be summed up in the right to govern which as already observed includes not only the right to use force directly for the protection of private and social rights but also to use it for the organization maintenance protection and administration of the government all of which are essential to the principal or final end and also within certain limits to promote the common good

The classification of the political rights of the State or the rights of government has been sufficiently indicated by the classification of its several functions They consist first in the extraordinary *right of political organization* and the *rights of the government* the last of which are to be divided into the *judicial* and the *administrative* rights the former of which is again to be divided into the *right of legislation* and that of *ordinary jurisdiction* and the latter into that of the *right of legislation*, and that of *government (Imperium)*

The rights as we have explained are however necessarily more extensive than the corresponding functions * and it will be necessary therefore to consider the limit to which they extend

§ 56 *Of the Limit to the Political Rights of the State*

This limit will vary under different circumstances In a less advanced stage of civilization in which public opinion and especially the sentiment of rights is not highly developed hardly any limit can be assigned to the powers of government but in our modern civilization the powers of government are much more limited The general principle governing the subject is however obvious, and is thus well expressed by Rutherford †

"The civil power is in its own nature a limited power as it arose at first from the social union so it is limited by the needs and powers of such union whether it be exercised as it is in democracies by the body of the people or as it is in monarchies by one single person In other words the most obvious dictates of reason demand that the powers of government should as far as practicable be limited to such power as may be necessary for the performance of its functions

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* See *Supra* p 245

† *Second Institutes of Natural Law* p 898

This power must necessarily be very great and we may even say of it with Hobbes *Non est super terram potestas quae comparetur ei* but still whether we consider the power of the ordinary government or the general power of the State it has its clearly defined limits With regard to the former such limits may be imposed by the State in the exercise of its function of political organization by constitutional limitations with reference to the latter this cannot be effected but the obvious limit is in the common sentiment of rights which measures at once its *rightful* and its *actual* power or in other words both its right and its might

With regard to the right of government as we have explained the limit thus imposed is the rightful one or in other words the State has no right to violate it With regard to its actual power or might this limit is equally effective for it is itself backed by the superior force and it takes from the government when this limit is exceeded the only force upon which it rests viz that of popular opinion Nor is it necessary except in extreme cases that this limit should be enforced by actual resistance or revolution The fear of such resistance is in general sufficient and thus constitutes a sanction essentially identical in its nature with that which restrains the would be robber or murderer

This force operates also by simply producing the non observance of the commands of the government Without this as we have explained laws fail to become operative and even laws originally operative cease to be so The power of government is also often successfully resisted and still more frequently evaded by individuals In this respect *despotic* have no advantage over *constitutional* governments In the latter of which the safety of the rulers and the observance of the laws are enforced not only by fear but by the intelligent sentiment of the community while in the former not only are the laws in general less observed in matters where the power of the sovereign does not reach but the sovereign himself is frequently assassinated Through these instrumentalities viz by fear by force and by evasion a real and powerful restraint is imposed upon the power of the State by the manners and customs, or in other words the morality of the people and especially by the sentiment of rights and by the force of popular opinion For—as we have observed—no fact in the history of mankind is more obvious than that beyond a certain point the power of government is unavailing against the quiet but resistless operation of this force and that when opposed by it laws in general are dead letters—either failing to take effect or becoming obsolete as manners and customs change This resistance indeed varies in different political societies but its real and powerful efficiency—which it may be safely affirmed increases with the growth of civilization—is strikingly conspicuous in modern civilized nations of the world in none of which can any government continue to exist if the rights of life liberty or property or those arising out of the family relations should become insecure either by reason of the inefficiency of the government or otherwise Indeed as we have observed the most characteristic distinctness of modern civilization consists in the clear and more definite conception of rights generally prevailing and the controlling power of this concept over government It is *Nomos* therefore (to use again the familiar saying of Hesiod) that is the only absolute king and Leviathan is but his vice gerent who like other subordinate ministers may within certain limits abuse the powers entrusted to him but if he undertakes to resist and defy the will of the true king is sooner or later made to know and submit to his power Briefly therefore the sentiment of rights in the human heart and the conviction that it is the right and the duty of every man when there is no other resort and where the infringement upon them is intolerable to vindicate them by force constitutes at once the rightful and the only practical limit upon the power of the State and hence—to quote again the expression of an eminent jurist—no State is capable of constitutional government unless composed of men who know their rights and knowing dare maintain them (*e*)

Opposed to this view is the modern doctrine of sovereignty as generally held in Europe and this country which has been already fully considered

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NOTES

(*a*) By the term juridical ([illegible] ral or fictitious) person is meant everything other than a human being which is regarded by the State as the proper subject of rights To this class belong first the State itself the [illegible] monarchy [illegible] as holder for the [illegible] being of the highest power of the State the treasury or *fiscus* and all State [illegible] the rights connected with them It includes moreover corporations of every kind all pious and charitable institutions (*piae causae*) recognized and approved of by the State [illegible] lastly the inheritance of a person deceased while it lies unacquired by the heirs *hereditas jacens* A corporation (*universitas corpus collegium*) is a body of persons united for some permanent object invested with the capacity of acting as a single person and recognized as a moral juridical person by the State (Kaufmann s *Mackeldey* §§ 141 142

Artificial conventional or juristic persons are such groups of human beings or masses of property as are in the eye of the law capable of rights and liabilities (Holland s *Ju* pp 74 75)

In our law a corporation is defined by Chief Justice Marshal as an artificial being invisible intangible and existing only in contemplation of law (Dartmouth *vs* Woodward 4 *Wheat Rep* 626)

It was chiefly says Chancellor Kent for the purpose of clothing the bodies of men in succession with the qualities and capacities of one single artificial and fictitious being that corporations were originally invented and for the same convenient purpose they have been brought largely into use Accordingly in the law persons are divided into natural and fictitious (persons in fact and persons by fiction of law) (Muirhead s *Ins of Gaius* p 570)

The distinction is thus admirably expressed by Hobbes *Leviathan* Chap xvi

A person is he whose words or actions are considered either as his own or as represent ing the words or actions of another man or of any other thing to whom they are attributed whether truly or by fiction When they are considered as his own then is he called a natural person and when they are considered as representing words and actions of another then is he a *feigned* or *artificial* person There are few things that are incapable of being represented by fiction Inanimate things as a church an hospital a bridge may be personated by a rector master or overseer An idol or mere figment of the brain may be personated as were the gods of the heathen which by such officers as the state appointed were personated and held possessions and other goods and rights which men from time to time dedicated and consecrated unto them

A multitude of men are made one person when they are by one man or one person represented so that it be done with the consent of every one of that multitude in particular And unity cannot otherwise be understood in multitude

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(*b*) The nature of International Right or law is also fairly explained by Vattel in the Preface to his well known work on the *Law of Nations* from which we extract the following

Hobbes's work [illegible] notwithstanding his paradoxes and detestable maxims Hobbes I say was the first who gave a distinct though imperfect idea of the Law of Nations This author has well observed that the Law of Nations is the Law of Nature applied to States

Puffendorf declares that he subscribes absolutely to this opinion espoused by Hobbes He has not therefore treated separately of the Law of Nations but has everywhere blended it with the Law of Nature properly so called

Barbeyrac the translator and commentator of Grotius and Puffendorf has approached much nearer to the just idea of the Law of Nations I confess says he that there are laws common to all nations [illegible] which ought to be observed by every nation with respect to each other and if people call these the *Law of Nations* they may do so with great propriety But the consent [illegible] the foundation of those [illegible] which they [illegible] these laws and [illegible] take place here any more [illegible] principles and obligations of such laws are in fact the same as those of the Law of Nature properly so called All the difference consists in the application made of them varied a little on account of the difference that sometimes subsists in the manner in which societies [illegible] charging their natural laws respecting each other

He further has justly noted that laws [illegible] rules and decisions of the law of nature cannot be applied merely and simply to sovereign States and that they must necessarily suffer some changes according to the nature of the new subjects to which they are applied But it does not appear that he has seen the full extent of his idea since he seems not to approve of treating the Law of Nations separately from the Law of Nature as it relates to individuals

This glory was reserved for the Baron de Wolf

Nations says he among themselves acknowledge no other law than that which nature herself has established It will therefore perhaps appear superfluous to give a treatise on the Law of Nations distinct from the Law of Nature But those who think thus have not sufficiently studied the subject

When we would apply to nations the duties which the Law of Nature prescribes to each man in particular and the rights it attributes to him in order that he may fulfill his duties these rights and these duties being no other than what are agreeable to the nature of the subjects they must necessarily suffer in the application a change suitable to the new subjects to which they are applied We thus see that the Law of Nations does not in every thing remain the same as the Law of Nature regulating the actions of individuals Why then may it not be treated of separately as a law proper to nations?

(*c*) Though much has been said about *comitas* it is an improper term there is no such thing as a decision from complaisance when jurists determine by the law of another country they do it *ex justitia* they are bound to do it In questions of succession for instance England and Scotland have different laws but if a man dies intestate in Scotland the English courts will not regard their own law in deciding on his succession They commit injustice if they determine by the English law What is the Scottish law? ought to be the very first question that they ask If they do otherwise they do wrong The judgment of Eng lish and Scottish judges [illegible] the same [illegible] both [illegible] same (Per M[illegible] J C [illegible] Watson v Re[illegible]ton 8 *Bell's Rep* 106)

(b) Th[illegible]s for [illegible] the [illegible] of counsel [illegible] arr[illegible] sedly. Courts would [illegible] to admit [illegible] in [illegible] maint[illegible] [illegible] fulfil [illegible] and th[illegible] the dwelling [illegible] I take [illegible] the first of th[illegible] the law given by Ulpian *J[illegible]* [illegible] to [illegible] injure no one [illegible] which is [illegible] the first referring to the [illegible] of morality [illegible] ance of rights of ownership or rights [illegible] the third to the performance of [illegible]gations

( ) This principle with some [illegible] is applied and admirably developed in V[illegible] *Struggle f[illegible]* [illegible] of the law he says [illegible] is war [illegible] The life of the law is [illegible] struggle a struggle [illegible] classes of [illegible] law the world has [illegible] law [illegible] right—the [illegible] right [illegible] as well as those [illegible] found it [illegible] story of Mi[illegible] K[illegible] [illegible] of the ma[illegible] another story with [illegible] which Mr [illegible] while [illegible] work appeals [illegible] of the r[illegible] [illegible] of right [illegible] that the first [illegible] In his Prefac[illegible] V[illegible] the [illegible] of his writing 1877 had been [illegible] [illegible] and [illegible] and Croatian

CHAPTER VII

OF THE PRINCIPLES OF POLITICAL ORGANIZATION

§ 57 *Aristotle's Classification of the Forms of Government*

There are many principles upon which the forms of government may be divided and as many different systems of classification Hence the several classifications adopted by political writers are numerous and on account of the neglect to distinguish between the different principles of division—it may be added—extremely bewildering A certain unity however results from the fact that publicists generally seem to have agreed in accepting in a more or less modified form the classification proposed by Aristotle with which therefore every exposition of the forms of government must naturally begin

This classification is based on two distinct principles and may be said to be a combination of the two corresponding classifications

The first of these consists in the division of governments into (1) those which have or rather are so constituted as to have *the common good* as their end and (2) those which have for their end the good of the rulers only The former are called by Aristotle *normal*, the latter *perverted* forms

The second classification is based merely upon the consideration of the number of individuals in whom the supreme power of the government is vested This he says must be vested either in an individual or in a few or in the many * Accordingly the several forms of government may be divided into (1) *Monarchy* or as Kant prefers to call it *Autocracy* † the government of one (2) *Oligarchy* the government of a few and (3) *Democracy* or *Ochlocracy* the government of the many But with regard to the last the term democracy is misleading The *demos* or people consists of all the members or at least all the free members of the community men women and children all of whom can not participate in the government and the term *ochlocracy* —the government of the mob—though more accurate carries with it an opprobrious sense that is out of place in the impartial realm of science The occasion therefore seems to demand the invention of a new term and perhaps no better for the purpose can be suggested than the term *Polyarchy*, which precisely expresses the idea intended without either approval or disapproval

Combining these two classifications there will result six forms of government—three normal and three perverted

Of these the normal forms are called by Aristotle (1) *Monarchy* the government of one (2) *Aristocracy* the government of the best i e of a class so regarded and (3) *Polity* so called in the Politics for lack of a distinctive name but, in the Rhetoric called *Timocracy* the government of the worthy

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* *Pol* iii Chaps vi vii

† *Phil of Law* p 207

The three perverted forms are (1) *Tyranny* (2) *Oligarchy* which on historical grounds he defines as a government of the rich (*Plutocracy*) and (3) *Democracy* which on like grounds he defines as the government of the poor

It needs but little reflection to perceive that what Aristotle calls the perverted forms of government are in fact the historical forms invariably presented And as all constantly recurring historical phenomena must be regarded as resulting from some law or principle of human nature they must be regarded as the actual or real forms of government and the normal forms as merely ideal We may therefore regard the former as Aristotle s actual or historical classification disregarding the latter and accordingly this is the form in which it has been generally received in modern times—the received division of governments being into (1) Monarchy (2) Oligarchy improperly called Aristocracy and (3) Democracy or Ochlocracy and this division rejecting the inappropriate term aristocracy we will adopt as our classification of actual governments

It is however obvious that the utility of a historical classification of governments consists merely in presenting them in a form convenient for investigation and that the object of such investigation is to discover the true or ideal forms which perhaps we may never fully realize but to which it is the object of political science to enable us to approximate We must examine therefore more particularly Aristotle s views as to the latter as contained in his division of governments into those which do and those which do not regard the common good as the end of the State

§ 58 *Of Constitutional and Absolute Governments*

On this point it is first necessary to observe that the term *the common good* here used—like the principle of Utility of which it seems to be an expression—is a very indefinite term and with politicians as a practical rule extremely dangerous for as we have observed though the principle of Utility—rightly stated—is a sound one that of General Utility or Utilitarianism which is the form of the principle most commonly used is a dangerous and even pernicious principle of polity being of all the weapons of political knavery and political stupidity the most effective and we may therefore say of it, as Austin untruly says of conscience that it is merely a convenient cloak for ignorance or sinister interest But these observations are not to be regarded as strictures upon Aristotle s views but rather as intended to prevent his being misunderstood For though he here uses what on account of its indefiniteness and also on account of the prevalence of the Utilitarian philosophy is at this time a peculiarly objectionable expression viz the common good ' he is elsewhere careful to explain that the political good is justice (*Pol* Bk iii Chap xii) of which he says all others must yield her the precedence (*Ib* Bk iii Chap xiii) and that it is the rule of the social State and the very criterion of what is right (*Ib* Bk i Chap ii) which is an anticipation of the view of German philosophers that the State is a *jural institution* (*Rechtsstaat status juris*) and that its essential end is the realization of justice

Thus understood this division of Aristotle agrees precisely with that of Mr Ahrens according to which there are two kinds of States only namely the *jural* and the *despotic* (*a*) the former of which he agrees with Aristotle in thinking can only be secured by a participation of the people in the government * This division is thus explained by Mr Ahrens

The principle of life of the State is Right (*Droit*) and there is only one just form of the State It is that which by the mode in which its powers and their relations to the national life are organized assures the reign of right (*regne de droit Rechtsstaat*) as the ethical and objective principle to which the will of all ought to be submitted and as the organic principle which guarantees to all its members and parts their position and free action and participation in the exercise of all the political powers The *Jural State* (*L Etat de Droit—Rechtsstaat*) is then the *normal* State formally organized of which self government forms the most salient characteristic The opposite of the Jural State is despotism the arbitrary personal will which puts itself in the place of right and of law enacted by the free consent of the people and efficaciously controlled in its execution Between the *Jural State* and despotism there are without doubt many intermediate terms but the way to despotism is opened whenever a government in matters of public order puts its own in the place of the action of its citizens and carries into effect its personal will without seeking to know or without respecting the national will †

§ 57 *Of the So called Ideocracy*

Mr Bluntschli while agreeing generally with Aristotle thinks a fourth form of the State should be added the normal form of which he calls *ideocracy* and the perverted form *idolocracy*, and which is defined by him as the State in which the supreme power has been attributed either to God or some other superhuman being or an Idea This form he says can exist only in a theocracy —which accordingly he uses as an identical term ‡ But Aristotle s doctrine of the supremacy of the law (*c*) or as expressed by Hesiod The reign of King Nomos (*Nomocracy*) or in the language of modern times the sovereignty of the law or still better the sovereignty of right comes equally within the definition It is however obvious that, in either a theocracy or a nomocracy the real rulers must necessarily be human beings and the form of government must therefore be either a monarchy an oligarchy or a polyarchy which indeed seems elsewhere to be admitted by Mr Bluntschli (*d*)

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* *Pol* Bk iii Chap vii *et seq*

† *Cours De Droit Naturel* Sec 114 (*b*)

‡ *Theory of the State* pp 331-338

The modern doctrine of Sovereignty in whatever form it be asserted—whether as the sovereignty of the government or that of the State or people—is but an *ideocracy* for in either case the supposed sovereign is merely a body politic or a fictitious or imaginary person or in other words an idea Of the two forms of the doctrine the latter—i e the sovereignty of the State or people—is an example of the *normal* form of *Ideocracy* and as we have observed its use as a metaphor expressing the notion that there is a higher power than that of government is to be encouraged though it must yield in the importance and dignity of the truth expressed to the nobler doctrine of the Sovereignty of Right or Justice or in other words of King *Nomos* The other doctrine—i e the sovereignty of the government—presents an equally striking example of the perverted form of *Ideocracy* called by Bluntschli *Idolocracy* of which Austin and the modern English or so called Analytical school of jurists may be taken as the peculiar representatives their *idol* being the Mortal God created by Hobbes and called Leviathan

§ 50 *Of the So called Mixed State*

Mr Bluntschli—whose own doctrine indeed is a kind of Ideocracy—has emancipated himself from this idolocracy to a certain extent He denies emphatically the absolute power of the sovereign (*e*) But he himself regards the State as a living and therefore organized being with a soul and body a will and active organs * in short as a moral organized masculine personality † with a psychological and human nature ‡ (*f*) And from this he infers that the supreme power of the State or sovereignty is indivisible and from this again he deduces many illegitimate conclusions §

Of these one of the most important is presented by his views as to the so called Mixed State as described by Cicero and others—a subject of much importance to which we will briefly refer (*g*) The possibility of such a State is repudiated by him and with this conclusion no fault can be found For in a constitutional monarchy as in every constitutional government the supreme power is vested in more than one and it is therefore according to Aristotle s definitions not a monarchy but an oligarchy or aristocracy (*h*) But the reasoning of Mr Bluntschli—which rests entirely upon the notion that sovereignty is indivisible—and also his conclusion that the limited monarchies of modern Europe are monarchies in the sense of Aristotle—is untenable

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[*] *Theory of the State* pp 18 19

[†] *Id* p [illegible]3

[‡] *Id* p 76

[§] Sovereignty implies *unity* a necessary condition in every organism (*Id* p 495)

In every constitutional government the sovereign powers are, in fact, divided Hence, to avoid this difficulty he is, as it were, compelled to misconceive and misconstrue the principle of Aristotle's classification, which is that "*the supreme power over the whole State,*" language that can mean nothing else than sovereignty, i e, the aggregate of all sovereign powers—"must necessarily be in the hands of one person, or of a few, or of the many "* But Bluntschli asserts that, according to Aristotle, it is the vesting, not of the whole sovereignty, but of "the governmental authority" only, which determines the form of the State, and from this "governmental" (or *regal*) "authority" "the legislative power" is expressly excluded" "But this" (the *governmental* or *regal* authority), he says, "is unsusceptible of division and, therefore, as it forms the principle of Aristotle's classification there cannot be a fourth form of government But on the same principle he might deny also, that either aristocracy or democracy is possible, for in both these forms the *governmental* power is—as we have seen—divided (i)

Accordingly he asserts—as on the principle of the indivisibility of the sovereign powers, he necessarily must—that in every so called mixed State, "the supreme governing power"—which can mean only the sovereignty—is in reality either in the hands of the monarch, or, of the aristocracy, or, of the people' † (j) And this is true provided we accept his new definition of sovereignty, as including only the *governmental* or *regal* or, as it is usually called, the *executive* power but according to the commonly received sense of sovereignty, and according to Aristotle's definitions, altogether false

This peculiar notion of sovereignty is strikingly illustrated by Mr Bluntschli's views of the English Constitution which are, in effect, that the English government is still a monarchy in Aristotle's sense of the term (*k*) And, on the other hand there are those who hold the opposite notion, equally unfounded, that the House of Commons is the sovereign, as was, in effect asserted by Mr Gladstone, in a late speech denouncing the rejection of the Home Rule Bill by the Lords as unconstitutional, and as is asserted in terms by Sir Frederick Pollock (*l*) And also by Mr. Burgess, who says (*Pol Science and Const Law*, p 96), that the House of Commons "is now the perpetual constitutional convention for the amending of the Constitution" But this view is obviously erroneous—as was practically manifested by its inability to enact the Home Rule Bill, and many other similar cases Mr Gladstone's denunciation of the House of Lords, on the occasion referred to, and his threat to abolish it, was, therefore, in effect, a threat of revolution, for the powers of the lords, as well as those of the king are, like those of the Commons, vested in them by the fundamental law, and they cannot be involuntarily deprived of them unless by revolution The extent of the power of the House of Commons is merely to force the government to dissolve it, and thus to appeal to the country. Hence, the view of Mr Austin is more logical, that the sovereignty apparently exercised by the House of Commons is vested not in the House but in its constituency (*m*)

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*Bk iii Chap vii

† *Id*, p 831

The view of Bluntschli that the king and that of others that the House of Commons is the exclusive sovereign are therefore equally untenable Sovereign power is undoubtedly vested and since the Commons became a constituent part of Parliament has always been vested in each of the three coördinate branches of the government as previously to the event referred to it was in the king and lords

§ 61 *Of the Essential Nature of Constitutional Government*

Bluntschli s doctrine as to the indivisibility of the sovereignty is obviously inconsistent with his own theory that it is limited For regarding sovereignty merely as the supreme or *highest* political power it is clear that if exclusively vested in the governmental or executive department of the government it cannot be limited by the legislative or the judicial department for this would be to vest in some respects a higher power in the latter The argument of Austin on this point * is conclusive Hence all constitutional government must consist of divided sovereign powers and this in fact constitutes the essential difference between such governments and despotic governments where the sovereign powers are concentrated in one hand Hence the most fatal aspect of Mr Bluntschli s argument is that if it be true constitutional government is impossible for the very essence of all constitutional government—it is universally admitted—is that the legislative power within its province must be supreme and in this country it is regarded as equally essential that the judicial power also shall be so Hence it may be said that every American State federal or constituent is in fact a *triarchy* consisting of three sovereign departments existing side by side each independent of the other each of which may, without much impropriety be called with reference to the power vested in it a sovereign This state of things is indeed regarded by Mr Bluntschli as impossible at least as a permanent institution † but so far is this from being the case that such division of powers is in our own case universally regarded as the surest foundation of permanency And it may be added that some such division of sovereignty is an essential and necessary condition of permanency in all States whose people are capable of vindicating their rights for no free people will willingly submit to despotic power

That from this division of powers conflicts may arise is inevitable but this is a necessary condition of human life and perhaps essential to human development individual and political Such conflicts may indeed even result in civil war and in fact have done so in numerous cases but this is but one of the means by which rational government political freedom and civilization have been developed Nor is it possible to preserve the fruits gathered from our painful experience, in any other way than by maintaining as our forefathers did the principles of right public and private not only by argument but when necessary by force and in last resort by arms

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* *Supra* p 205

† *Theory of the State* pp 333 334

Nor indeed as one might think is the case from the difficulty encountered by modern publicists in conceiving the possibility of a government of mutual checks and balances between the powers of several departments of government is the world without abundant experience on this point The English people throughout a history of over eight hundred years has presented a most conspicuous and it may be added valuable example of such a government The distribution of the sovereign powers first between the king and the lords and afterwards among the king lords and Commons did indeed provoke conflict and numerous civil wars But to this principle of the division of sovereignty and the wars resulting from it the modern world owes the idea and the possibility of constitutional liberty And now that the conflict has for a while ceased the only fear is that the results of such painful labor and struggle may be ignorantly lost and government become a mere representative democracy without constitutional checks If this should prove to be the case the result will be attributable mainly to the supremacy of the Austinian philosophy and especially to the doctrine of the indivisibility of sovereign power

Another illustration of the principle is presented by the Roman republic where as we have seen there existed side by side without affecting the permanency or efficiency of the government two sovereign and coordinate legislatures and two sovereign consuls each vested with full regal powers and also alongside of the regular government the political organization of the whole people an independent sovereign organization of a class namely the *Plebs* represented by the tribunes of the people in each of whom was vested the power to *veto* or nullify all the acts of the other departments and officers of the government including even those of his own colleagues (1) The English and the Roman constitutions are admittedly the most successful that history presents Other instances might be cited but these will be sufficient

Recapitulating what has been said it will be observed and cannot be too often repeated that the divisibility of the sovereign powers of the government constitutes the essential characteristic or specific difference of constitutional government and consequently governments may be divided on this principle into two classes namely the Constitutional and the Absolute or Despotic the former of which consists of those in which the sovereign powers are distributed among several classes of officers or departments the latter of those in which the whole sovereign power is centred in a single officer or assembly

§ 63. *Of the Principles that Should Govern the Distribution of the Sovereign Powers*

To determine the modes in which the sovereign powers of the State may be most safely and efficiently distributed in the government is the great problem of political organization. This problem however does not admit of any general solution but is to be differently solved according to the character of the people and the circumstances that surround them and especially the grade of civilization that characterizes them. There are indeed certain general principles governing the subject that have been evolved by a long and painful experience and which when well understood and applied may be accepted but in general the particular mode of their application must be determined in a large measure by experience and by the natural development of political institutions. For no fact in the constitution of the State is more obvious or more important than that the political institutions of the State are mainly the result of a natural or organic development and that in this fundamental matter as in all others the extent and limit of human power is to modify this development either by conserving improving and perfecting it or by hindering and destroying it.

Hence it is a principle of political organization as obvious as it is generally disregarded that political reforms should be cautious and gradual and such only as are clearly and obviously suggested by the necessities of the times and a thorough knowledge of existing institutions their nature and significance and their practical operation for obviously political innovations are too serious to be undertaken until necessity demands and they never can be safely adopted without a just appreciation of their effect upon the existing order. On the other hand reform is as essential to preserve the body politic in health as are the cares of the physician to the natural man and looking back to the experience of the nations that have appeared and disappeared on the theatre of the world's history it may be said that their decay and death when not occasioned by external force have been the result of defects in their political institutions that might have been reformed. Hence as it were we have to pass between Scylla and Charybdis, and it is almost impossible to avoid on the one hand the dangers of injudicious reform and on the other those of stupid conservatism (*o*).

Hence from a logical and scientific point of view no principle of party division could be more irrational than that on which parties are in fact usually divided and which is founded upon the distinction between conservatives, and radicals or liberals. The wise man will be either as the occasion demands or, rather he will at all times, be both that is liberal and even radical, in thought but conservative in sentiment and in practice. And this suggests another important consideration which is that the permanent organization of political parties is itself irrational and, as constituting *imperia in imperio*, inconsistent with a rational and efficient political order That parties should exist is not only desirable but inevitable but that they should be organized in permanent corporations as they are is a different matter On the contrary it seems obviously desirable that the division of parties should take place with reference to each important political question as it may arise and that their duration should be determined by the duration of the controversy And hence it follows that instead of the people of the country being divided into two great hostile political organizations determined entirely by federal politics there should be a different division of parties in State from that existing with reference to federal politics and again that there should be another and entirely different division in counties and cities with reference to their local affairs and that parties thus formed should be of only temporary duration This indeed in view of the influence of custom and association is hardly to be hoped for But the evils of the existing system may to a large extent be remedied by the increase of men capable of independent thought and action and of disregarding parties except so far as they may find them fitting instrument of attaining rational political ends

This apparent digression has been rendered necessary by the necessity of guarding against the fatal delusion that in practical politics theoretical principles are always to be put immediately in practice and it may be added that in general the sole instrument or means by which political theory is to be realized is general opinion which should lead and not follow legislation

With this caution we will now return to the consideration of the theoretical principles that should govern the distribution of sovereign powers

(1) An obvious principle upon which this distribution may proceed is that of locality which is the principle observed in the constitution of federal States where as we have seen the sovereign powers are divided between the federal and the constituent States The nature of this kind of government has already been considered at length Certain publicists as we have seen deny the possibility of such a division of the sovereign powers and hence in effect the possibility of the federal State but it has been shown that this view is untenable It may be added now that in view of the tendencies manifested in the history of the race it is to this character of State that we must look as the principal instrument of the advance of political civilization in the future

In the historical evolution of States we observe a constant tendency to the enlargement of the territory and population embraced under the jurisdiction of the State Thus we have seen the primitive clan or *gens* absorbed into the village and this again into the ancient city, and this finally by the great Roman empire and this has been followed by the feudal States of mediæval and the great national States of modern times, and it is to be apprehended that this tendency unless modified may go on unchecked to results not now anticipated (*p*) Of the several classes of States thus evolved we may take two as representative types, namely, the ancient city and the modern State or empire Of these there cannot be any doubt that so far as yet disclosed in history the first is the more perfect type or in other words it is the type of State that has most perfectly fulfilled the essential end of the State namely the harmonious development of the individual and that the modern State though perhaps of a higher order of development cannot be compared with the city State of the ancient world in this respect Fully to establish this proposition would necessitate a historical disquisition too extensive for these pages (q) but the fact will be made sufficiently clear by a comparison of any modern State with that of Athens—an insignificant country in point of numbers and extent but which has played a greater part in the history of the race and the development of its civilization than any of the great empires of the world On the other hand this type of State presented one essential defect which was that on account of its size it proved itself unable to cope with external aggression and thus in the development of larger political organizations necessarily succumbed On this account it has been condemned in unqualified terms by publicists generally who have consequently come to regard this capacity for large political organization as the distinguishing mark of the political genius of the people In this they are undoubtedly right to the extent that this capacity under the conditions that are presented in human history up to this time has been essential to political existence But it is equally obvious from experience that the organization of large States while under existing conditions essential to political existence carries with it many evils and especially that it is to a large extent injurious to the development of the individual morally and intellectually Hence it seems evident that a combination of the advantages of the larger and the smaller State is desirable and this is precisely what is effected by the federal organization It is indeed impossible in modern times and in view of the immense development of population and business interests to return to the city State but smaller political organizations of sovereign character such as in our country are presented by the States of the Union are possible and these generally are sufficiently limited in population and territory to subserve the same purposes as the city State

In Europe where the existence of each State is threatened by hostile powers its policy under existing conditions, must be determined by this sole consideration But here in America we are absolutely free from such considerations and an opportunity for political development is thus given us which has never before, in the history of the race been presented to the same extent and nothing but political prejudice born of circumstances that no longer exist can stand in our way To what extent this circumstance in our situation may or should influence our future development, is to some extent illustrated by the history of our mother country which, by reason of its isolation alone of the countries of modern Europe, has been able to develop a liberal and rational constitution

In this country also it is to be observed that under our federal Consti tution the separate States which are sovereign as to nearly all the great interests of society are in a position to reform their political organizations, free from all fear of foreign interference and hence that they present the most appropriate and hopeful fields for the operation of political reform

With these observations upon the federal State we pass to the consideration of the distribution of sovereign powers in the government of each State

(2) The first great division of powers to be considered is that between the ordinary government and the constituent electorate This distinction is more or less ignored or at least its significance misunderstood by European publicists but it is clearly marked out in this country by our actual constitutional practice With us as is expressed in the phrase the sovereignty of the people the electorate is regarded as supreme or in other words sovereign but in asserting this proposition it must always be understood that its power is limited as is all other political power by the principles of right

With regard to the composition of the electorate or in other words the qualifications of electors I know of no principle that can be asserted as universally true We have adopted practically that of universal suffrage and the rule of the majority but with regard to the former it is admitted by all that a certain degree of political civilization is required in order to make the principle practically efficient and we may therefore assume that the doctrine of universal suffrage does not assert a natural and inalienable right but that it is to be regarded among people of sufficient political virtue and intelligence as the best practicable solution of the question

With regard to the rule of the majority as existing under our present political organization our approval must be even less unqualified The existing operation of this principle may be considered in two aspects viz as to its *theoretical* and as to its *practical* working With regard to the former the legislative power—in which the other powers of the government have been largely absorbed—is supposed to be exercised by our representatives Our government therefore is in theory though not according to the common notion an oligarchy consisting of our chosen representatives but this in fact, is not the case The rulers of the country are in reality the majority of the representatives , and these represent not the whole of the electorate but simply the majority of the electorate and the minority in many States as, for instance in the Southern States, and in the Eastern States with one exception, and in most of the old Northwestern States are as completely and permanently disfranchised as though they lived under the Czar of Russia But practically even this is not realized The actual constituency of the representatives does not consist of the electors generally or even of the electors assembled in conventions but of the professional politicians and party leaders , so that we are really living under an oligarchy, constantly alternating from the political managers of one party to those of the other

It seems therefore that in this respect a reform is imperatively demanded at least in the State governments and the nature of this reform is equally obvious It consists of the principle of *proportional representation* the most approved form of which is that known as the Hare plan with reference to which it may be said as far as it is possible to foresee the result of an untried experiment that in it is to be found a remedy for the principal political evils of the day For first it will emancipate minorities and our legislative assemblies will become truly representative representing minorities as well as majorities secondly it will altogether dispense with political conventions and professional politicians thirdly it will restore to the individual citizen who desires to participate in the government of the country that independence of thought and of action of which as a condition of entering into politics he is now absolutely deprived and fourthly it will admit of the facile organization of third parties representing all the several interests opinions and principles existing in the country and thus in place of the dead level of character and intellect that is engendered by the existing system it will substitute the free and harmonious development of all the natural tendencies of society

(3) With regard to the distribution of sovereign powers in the government the most general principle that should govern our conclusions is suggested by the consideration that the State as expressed by the German publicists is a *jural* State (*Rechtsstaat*) or in other words that its principal end and function is to establish justice which can be practically effected only by protecting the rights of men individually and collectively from the aggressions of human power whether exercised by individuals or the State

(4) To effect this end it is necessary that a judicial power should be constituted competent to determine controversies between individuals and between individuals and the government with reference to their mutual rights and obligations and in order that the judicial power may be adequate to the performance of this function it is obviously desirable that it should as far as possible be independent or in other words sovereign and therefore coördinate with the other sovereign departments or officers of the government

(5) It is necessary to the efficient administration of justice that with reference to rights otherwise indeterminate general rules should be established , and as we have already shown the establishment of such rules determinative of questions of right, constitutes part of the function of the judicial department But the function of establishing such rules, or in other words the function of *legislative jurisdiction* or *judicial legislation* should be distinguished from that of ordinary jurisdiction, and should be vested in a different body, or organization, from that of ordinary judges Hence, in the most efficient organization of the judicial department it would consist of the courts, and of a judicial commission or legislature It is to be observed, however, that the performance of the respective functions of these two departments should be governed by the same con-

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sideration namely that justice should be observed and hence there seems to be no necessity for regarding them as separate and coordinate departments but rather as two different organizations in the same department charged with essentially the same functions

(6) But the judicial department is itself a part of the government or political organization of the State which is charged generally with the maintenance of the State and its defense against foreign and domestic enemies and also with the protection of the rights of individuals against aggression and hence among its functions is that of protecting the people and the State generally against the abuse of the judicial power as well as against the abuse of the other powers of the State These functions of the State exclusive of its judicial functions we have been forced for lack of a better term to call its *administrative* functions These must be divided again into the *legislative* function and the *governmental* or as it may be otherwise called the *imperial* function and each of these in an efficiently organized government should in the main be vested in independent officers and departments namely the *legislative* and the *governmental* departments each of which should be coordinate with the other and with the judicial power and in its sphere supreme or sovereign

(7) The above division of functions as will be observed accords in the main with the received division of the functions of the State into the *executive* the *legislative* and the *judicial* It differs from it however in the following respects Under the received division of functions as exemplified in our own constitutions and those of other States the *legislative* department improperly exercises the function of *legislative jurisdiction* and also many of the *governmental* functions The former as we have said should be vested in the judicial department and the latter should be restored to the governmental or so called executive department of the State

(8) The nature of the legislative department and of its functions are sufficiently familiar not to require an extended explanation It will be sufficient therefore to accept the general view upon the subject noting only where it requires to be modified Of which modifications the first to be observed is that it is not to be regarded as including the function of legislative jurisdiction or juridical legislation now generally exercised by it but which according to the view we have taken ought to be vested in the judicial department

In addition it may be observed that it is a matter of grave doubt whether in other respects the modern representative legislature might not with advantage be materially modified and its functions largely reduced Originally the legislative power operated simply as a check or limit to the exercise of the governmental or *regal* power against which it was its chief function to protect the lives liberties and property of the citizen And this function as illustrated in English history was accomplished by effectually establishing first the principle that no man shall be deprived of life liberty or property except by due process of law secondly the practical independence of the judiciary and finally the exclusive control of the limit and the ways and means of taxation by the legislative department Ultimately however the governmental or *regal* power was in England transferred from the king to a parliamentary commission depending in effect for the continuance of its official existence upon the House of Commons by which on the whole the function is fairly well administered But in this country while the governmental functions are still to a considerable extent left in the President or other head of the government they have in the main been absorbed by the legislative department and are necessarily exercised by it through committees of a temporary nature generally unknown to the public and hence to a large degree irresponsible Thus the governmental and the legislative functions having become in the main united in the legislative body the power of taxation has become entirely unlimited and the property of the citizen has come to be wholly at the mercy of the irresponsible power of the legislature and thus the principle of the immunity of private property from governmental aggression established in the mother country by the bloody struggles of six hundred years has been entirely eradicated from our Constitution The only difference is that the unlimited power of taking the property of the citizen once asserted by the king who might at times be able and honest is now freely exercised without challenge by bodies of men who experience seems to teach us cannot possibly be either Hence has resulted the constant increase of taxation both in the federal and constituent States and in municipalities and counties, and the obvious fact is disregarded that taxation may be carried to the extent of actual confiscation of all visible property and may thus result—as it did in the case of the Roman empire—in the actual destruction of the State For this evil the obvious remedy would seem to be to take from the legislative and to restore to the governmental department all strictly governmental functions including the initiative of all legislation and especially of legislation determining the amount of money required for the needs of the government but leaving to the legislature to whom the function properly belongs the initiative of determining the ways and means of raising the amount required

This indeed would necessitate a large increase in the powers and functions of the government or governmental department But this too is desirable and indeed is one of the most pressing demands of our age and country, and it cannot be doubted that governments vested with larger powers and more responsible functions and thus naturally enjoying that respect and consideration for the governmental power that has almost died out with us, would be capable of more efficient service than under our present system

(9) The nature of the *governmental* power is more complicated and less familiar than that of the legislative department It is best expressed by the terms, *royal*, *regal*, *imperial*, all of which have been applied to it

by eminent publicists * Generally it may be said that it is vested with the function of executing the enactments of the legislative department and hence it has been called the Executive Power But this as we have observed is but a subordinate function and in addition to it the government is charged with the function of supervising all the departments of the government in the exercise of their functions and also with the supervision of the welfare of the State generally And among its other functions in the opinion of eminent publicists already referred to (in which I entirely concur) it ought to be charged mainly though not exclusively with the initiative of legislation and to a greater or less extent with the veto power

This extensive increase in the functions of the government and of the respect and consideration in which it is to be held is indeed opposed by our democratic prejudices but in fact these functions must exist somewhere and when not vested in the head of the government will be exercised not by the legislative power which is incapable of performing them but by temporary legislative commissions

The expediency of this change rests in addition to what has been said upon the obvious consideration that the administration of political affairs outside of the judicial department, is merely a matter of business differing from ordinary business only in the fact that it is infinitely more complicated and difficult to be performed and as in ordinary business men trained to its administration are essential so *a fortiori* it is necessary that the business of the government should be conducted by men of trained efficiency and in the main of permanent tenure of office and this can only be effected by vesting the governmental functions in a thoroughly organized department the leaders of which as in all other business operations should be few in number and thoroughly competent On the other hand it is an equally obvious consideration that the legislative body should consist of men taken from the people at short intervals, and in close sympathy with them and in fact representing them in their opinions and sentiments To this end it must necessarily consist of many members and therefore be incapable as a body, of exercising governmental functions

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NOTES

(*a*) This seems to agree also with the division made by Kant, as explained by the author According to Kant, there are two governmental forms—the *republican* and the *despotic*—the first which is alone capable of securing a good administration exists where there is a division of powers the second where all the powers are united in the hands of the sovereign individual or collective (*Cours de Droit Naturel* 117)

It is also the division of Mr Calhoun and is thus clearly explained by him

Constitutional governments of whatever form are indeed, much more similar to each other, in their structure and character, than they are, respectively, to the absolute governments, even of their own class All constitutional governments, of whatever class they may be, take the sense of the community by its parts—each through its appropriate organ, and regard the sense of all its parts, as the sense of the whole They all rest on the right of suffrage, and the responsibility of rulers, directly or indirectly On the contrary, all absolute governments, of whatever form, concentrate power in one uncontrolled and irresponsible individual or body, whose will is regarded as the sense of the community And, hence, the great and broad distinction between governments is —not that of the one, the few, or the many—but of *the constitutional*, and *the absolute* "

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* *Supra* p 261

Thus far, I think the principles of concurrent majorities, as expounded by Mr Calhoun, is generally conceded in this country by thinking men, nor do I know of any serious difference of opinion among American statesmen and publicists of approved reputation prior to the war The heated controversies between parties, represented in the popular imagination by Webster and Clay on the one hand, and Calhoun and Hayne on the other, was merely as to the application or extension of the principle Mr Calhoun in effect held that the principles of rational constitutional government required that every class or minority of respectable proportions, which by sectional division, peculiar interests or otherwise, stood permanently separated and distinguished in opinion and in interest from the rest of the community, should have, as the only efficient means of self-protection, a veto power, which, as a principle of political science, was but to assert the right of every community of considerable proportions to self government, but he further asserted, as a principle of the actual constitution, the right of every State to nullify a law that it deemed unconstitutional, or, as a last resort, to withdraw from the Union This was the actual issue, which, in its result, consigned to obscurity the works of one of the purest statesmen, and one of the most acute, profound, and analytical minds of modern times, and which finally terminated in a war that cost a million lives, and billions of money Upon the merits of the question, in view of the passions engendered in this country by the struggles of a century, and the culminating horrors of civil war, it is too early yet to justify a discussion We have entered upon it simply for the purpose of showing that the principle of the division, not only of the sovereign powers generally, but also of the legislative power particularly, is not in question—for to deny it is to deny the possibility of constitutional government—but the question of the extent of its application only

(*b*) Mr Ahrens, while agreeing with Aristotle's division of States, is, I think erroneously, of the opinion that it "touches only the surface of political relations," and he adds, "that it is necessary to determine the form of the State according to its fundamental idea, or according to the principle which animates all political organization, and which gives it its type and its principal character" (*ib*) But this, as we have seen, is precisely the method pursued by Aristotle, whose conclusion seems also substantially to agree with his own

(*c*) "He who bids the law be supreme, makes God supreme, but he who entrusts man with supreme power, gives it to a wild beast, for such his appetites sometimes make him" (Bk III, Chap. xvi). "The supreme power should be lodged in laws duly made" (Bk. III, Chap xi).

(*d*) "Some French statesmen with good intentions, but without much success, have attempted to oppose to this destructive conception of the sovereignty of the people, the idea of the sovereignty of reason or justice . . The error which recognises the only fundamental *form* of State in absolute democracy is here opposed by the error of ideocracy" (*Theory of the State*, pp 499, 500) But, as the author justly observes, in this doctrine the fact is overlooked that "right can only belong to a person, and that political supremacy can only be ascribed to a political personality."

(*e*) "Louis XIV and the Jacobins of the Convention of 1793," he says, "alike regarded themselves as omnipotent. Both were wrong Modern representative government knows nothing of absolute power, and there is no such thing on earth as absolute independence Neither political freedom nor the right of the other organs and elements of the State are compatible with such unlimited sovereignty and wherever men have attempted to exercise it their presumption has been condemned by history Even the State as a whole is not almighty for it is limited externally by the rights of other States and internally by its own nature and by the rights of its individual members (*Theory of the State* p 434)

(*f*) This he says is very clear to him but as there are persons sometimes educated persons who have no musical ear or are completely insensible to the beauty of a painting or a drawing so there are many learned men who are complete strangers to organic or psychological thinking Hence he apparently denies to Ahrens the right to call himself a believer in the organic theory of the State He has undertaken he says to write such a theory but by the organism of the State he does not so much understand a living and personal collective being as an organic arrangement for community in law or (as I suppose it is in the original) right

I made the mistake he adds of presupposing some understanding for this science which I had made known in my *Theory of Parties* but I found out I was in error and that all psychological thinking about the State was strange and unknown to the education of the lay My *Studies* were put aside as the incomprehensible nonsense of an otherwise intelligent man The fruits of these studies as they have been matured in the present work are received with general acceptance (*ib*) The last is an astounding statement and if true would argue almost as low a state of political science in Germany as exists in England but in this the author probably flatters himself

The work of Mr Bluntschli is a valuable one but this extravagant notion that the State is an organic being or in plain English or at least in logical effect an animal has vitiated all his conclusions In this respect Ahrens and though I am acquainted only at second hand with his works I presume Krause are safer guides

(*g*) Aristotle himself recognized mixed constitutions *Pol* iv 7 *Quartum quoddam genus reipublicae maxime probandum esse sentio quod est ex his quae prima dixi moderatum et permixtum tribus* Cicero *De Republ* i 29 *Polybius* (vi 11) had previously described the Roman constitution as mixed Plato (*Laws* 12) treated Sparta as a mixed government but without using the phrase (*Theory of the State* p 332 note) If it is understood continues the author that the supreme governing power is itself divided between the monarch the aristocracy and the people so that two supreme governments exist side by side each independent of the other then Tacitus is right in rejecting the idea of a mixed State and in maintaining that its existence or at any rate its continuance is impossible (*ib* 331 333) *Tacitus Annals* iv 33 *Cunctas nationes et urbes populus aut primores aut singuli regunt delecta ex iis et consociata reipublicae forma laudari facilius quam evenire vel si evenit haud diuturna esse potest*

(*h*) *Theory of the State* Bluntschli p 400 n It is hardly necessary to remind English readers says the translator that our constitution is a monarchy only in the popular and not in the scientific sense

(*i*) *Theory of the State* pp 379 383 It is generally forgotten he says in the paragraph last cited that the principle of Aristotle s division does not rest on the nature and composition of the *legislative* power for in any advanced State this is usually representative of the chief elements of the whole nation On the contrary it depends on the antithesis between the government and the governed and upon the question to whom the supreme administrative power belongs This latter cannot be divided not even between a king and his ministers, for this would create a dyarchy or triarchy and would be opposed to the essential character of a State which as a living organism requires unity In all living beings there is a variety of powers and organs but in this variety there is unity Some organs are superior and others inferior but there is always one supreme organ in which the directing power is concentrated The head and the body have no separate and independent life but they are not equal So also for the

State, a supreme organ is a necessary condition for its existence, and this cannot be split into parts, if the State itself is to retain its unity "

(*j*) "By a mixed State may be understood one in which monarchy, aristocracy, or democracy are moderated or limited by other political factors, *e g*, a monarchy may be limited by the formation of an aristocratic Senate or Upper House, and of a primary or representative Assembly of the people In that case it is true that such a divided constitution is better than when an individual, or a few, or the majority rule absolutely and without restraint But such a mixture as this does not create a new form of State, for the supreme governing power is still concentrated in the hands of the monarch, or of the aristocracy, or of the people "

(*k*) "As the Middle Ages came to an end," he says, "the modern constitution of the State was close at hand It is the end of a history of more than a thousand years, the completion of the Roman-Germanic political life, the true political civilization of Europe

' This form of State was first developed in England, where it had long been slowly but surely ripening "

"Constitutional monarchy is a combination of all other forms of State. It preserves the greatest variety without sacrificing the harmony and unity of the whole While giving free room to the aristocracy to exercise its powers, it imposes no restraint upon the democratic tendencies of the people. In its reverence for the law we can even see an ideocratic element. But all these various tendencies are held together in their due relations by the monarchy, the living head of the State organism

" The English king has realized that he does not represent his own will, but that of the State Thus the ministers and—since the English ministers are kept in power by the confidence of Parliament, or rather of the House of Commons—the popular representatives have more influence over the government than in continental States. So far the English monarchy may be called parliamentary or republican But the reverence for the crown is nowhere stronger than in England, and however strong the aristocratic elements, and the Parliament may be, the English constitution has remained a monarchy "

(*l*) *History of the Science of Politics*, p. 92, note "We now say," observes the author cited, "that political power, as distinct from legal sovereignty, is in the last resort with the majority of the House of Commons "

(*m*) "In our country, for example, one component part of the sovereign or supreme body is the numerous body of the Commons (in the strict signification of the term) that is to say, such of the Commons (in the large acceptation of the term) as share the sovereignty with the king and peers, and elect the members of the Commons House " "Consequently the sovereignty always resides in the king and the peers, with the electoral body of the Commons " (*Jur*, pp 251-253).

(*n*) A full account of the Constitution of the Tribunate is given by Mr Calhoun, in his *Disquisition on Government*" (pp 94, *et seq*), from which we extract the following

"Such was the origin of the tribunate; which, in process of time, opened all the honors of the government to the plebeians. They acquired the right, not only of vetoing the passage of all laws, but also their execution, and thus obtained, through their tribunes, a negative on the entire action of the government, without divesting the patricians of their control over the Senate. By this arrangement, the government was placed under the concurrent and joint voice of the two orders, expressed through separate and appropriate organs, the one possessing the positive, the other the negative powers of the government. This simple change converted it from an absolute, into a constitutional government—from a government of the patricians only, to that of the whole Roman people—and from an aristocracy into a republic In doing this it laid the solid foundation of Roman liberty and greatness.

"A superficial observer would pronounce a government, so organized as that one order should have the power of making and executing the laws, and another, or the representatives of another, the unlimited authority of preventing their enactment and execution, if not wholly impracticable, at least too feeble to stand the shocks to which all governments are subject, and would, therefore, predict its speedy dissolution, after a distracted and inglorious career

"How different from the result! Instead of distraction, it proved to be the bond of concord and harmony, instead of weakness, of unequaled strength, and, instead of a short and inglorious career, one of great length and immortal glory. It moderated the conflicts between the orders, harmonized their interests and blended them into one, substituted devotion to country in the place of devotion to particular orders, called forth the united strength and energy of the whole, in the hour of danger, raised to power the wise and patriotic; elevated the Roman name above all others, extended her authority and dominion over the greater part of the then known world, and transmitted the influence of her laws and institutions to the present day Had the opposite counsel prevailed at this critical juncture had an appeal been made to arms instead of to concession and compromise, Rome, instead of being what she afterwards became, would, in all probability, have been as inglorious, and as little known to posterity, as the insignificant States which surrounded her, whose names and existence would have been long since consigned to oblivion had they not been preserved in the history of her conquests of them But for the wise course then adopted, it is not improbable—whichever order might have prevailed—that she would have fallen under some cruel and petty tyrant, and finally been conquered by some of the neighboring States or by the Carthagenians or the Gauls. To the fortunate turn which events then took, she owed her unbounded sway and imperishable renown.

"It is true, that the tribunate, after raising her to a height of power and prosperity never before equaled, finally became one of the instruments by which her liberty was overthrown, but it was not until she became exposed to new dangers, growing out of increase of wealth and the great extent of her dominions, against which the tribunate furnished no guards. Its original object was the protection of the plebeians against oppression and abuse of power on the part of the patricians. This it thoroughly accomplished, but it had no power to protect the people of the numerous and wealthy conquered countries from being plundered by consuls and proconsuls. Nor could it prevent the plunderers from using the enormous wealth, which they extorted from the impoverished and ruined provinces, to corrupt and debase the people, nor arrest the formation of parties—irrespective of the old division of patricians and plebeians—having no other object than to obtain the control of the government for the purpose of plunder Against these formidable evils, her constitution furnished no adequate security Under their baneful influence, the possession of the government became the object of the most violent conflicts, not between patricians and plebeians, but between profligate and corrupt factions They continued with increasing violence, until finally Rome sunk, as must every community under similar circumstances, beneath the strong grasp, the despotic rule of the chieftain of the successful party—the sad but only alternative which remained to prevent universal violence, confusion and anarchy"

In further illustration of the principle stated in the text the Slavic principle may be referred to, that requires unanimity to give validity to a political act. This is referred to by Mr Bluntschli as practicable only in small and entirely homogeneous communities, but it is well known to have been exemplified on a large scale in the Polish government. I do not, of course, recommend the principle as applied in that government, but it worked fairly well for over two hundred years

It is thus explained, and also a similar institution of another people, by Mr Calhoun (*Disquisition on Government*)

"It is, then, a great error to suppose that the government of the concurrent majority is impracticable or that it rests on a feeble foundation History furnishes many examples of such governments, and among them, one, in which the principle was carried to an extreme that would be thought impracticable had it never existed. I refer to that of Poland. In this it was carried to such an extreme that, in the election of her kings, the concurrence or acquiescence of every individual of the nobles and gentry present in an assembly numbering usually from one hundred and fifty to two hundred thousand, was required to make a choice, this giving to each individual a veto on his election So, likewise, every member of her Diet—the supreme legislative body—consisting of the king, the senate, bishops and deputies of the nobility and gentry of the palatinates, possessed a veto on all its proceedings, thus making an unanimous vote necessary to enact a law, or to adopt any measure whatever And, as if to carry the principle to the utmost extent, the veto of a single member not only defeated the particular bill or measure in question, but prevented all others, passed during the session, from taking effect Further, the principle could not be carried It, in fact, made every individual of the nobility and gentry, a distinct element in the organism, or, to vary the expression, made him an *Estate of the kingdom* And yet this government lasted, in this form, more than two centuries, embracing the period of Poland's greatest power and renown Twice, during its existence, she protected Christendom, when in great danger, by defeating the Turks under the walls of Vienna and permanently arresting thereby the tide of their conquests westward.

"It is true her government was finally subverted and the people subjugated, in consequence of the extreme to which the principle was carried, not, however, because of its tendency to dissolution *from weakness*, but from the facility it afforded to powerful and unscrupulous neighbors to control, by their intrigues, the election of her kings. But the fact, that a government, in which the principle was carried to the utmost extreme, not only existed, but existed for so long a period, in great power and splendor, is proof conclusive both of its practicability and its compatibility with the power and permanency of government.

"Another example, not so striking indeed, but yet deserving notice, is furnished by the government of a portion of the aborigines of our own country I refer to the Confederacy of the Six Nations, who inhabited what now is called the western portion of the State of New York One chief delegate, chosen by each nation, associated with six others of his own selection—and making, in all forty-two members—constituted their federal or general government. When met, they formed the council of the union, and discussed and decided all questions relating to the common welfare As in the Polish Diet, each member possessed a veto on its decision, so that nothing could be done without the united consent of all. But this, instead of making the Confederacy weak or impracticable, had the opposite effect. It secured harmony in council and action, and with them a great increase of power The Six Nations, in consequence, became the most powerful of all the Indian tribes within the limits of our country They carried their conquest and authority far beyond the country they originally occupied"

(o) The essay of Bacon, "Of Innovations," which follows, is almost too familiar to be quoted, but the true principles of reform are nowhere so admirably and wisely expressed

"Time is the greatest innovator, and if time of course alter things to the worse, and wisdom and counsel shall not alter them to the better, what shall be the end? It is true, that what is settled by custom, though it be not good, yet at least it is fit, and those things which have long gone together, are, as it were, confederate within themselves, whereas new things piece not so well, but, though they help by their utility, yet they trouble by their inconformity, besides, they are like strangers, more admired and less favored. All this is true, if time stood still which contrariwise, moveth so round, that a froward retention of custom is as turbulent a thing as an innovation, and they that reverence too much old times are but a scorn to the new It were good, therefore, that men in their innovations would follow the example of time itself, which indeed innovateth greatly, but quietly, and by degrees scarce to be perceived; for otherwise whatsoever is new is unlooked for, and ever it mends some and pairs (injures or impairs) other, and he that is holpen, takes it for a fortune, and thanks the time; and he that is hurt, for a wrong, and imputeth it to the author. It is good also not to try experiments in States, except the necessity be urgent, or the utility evident, and well to beware that it be the reformation that draweth on the change, and not the desire of change that pretendeth the reformation; and lastly, that the novelty, though it be not rejected, yet be held for a suspect, and, as the Scripture saith, 'That we make a stand upon the ancient way, and then look about us, and discover what is the straight and right way, and so to walk in it'"

(*p*) Napoleon is reported to have said that all Europe must become either republican or Cossack and it is not unreasonable to expect—existing political tendencies remaining unchanged—that Europe, as well as Asia, will finally fall under the dominion of Russia, and thus the *idea* of the *world state*, entertained by some of the German jurists, be practically realized

(*q*) The subject is ably and entertainingly treated by Mr Fowler in *The City State*.

PROCEEDINGS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

HELD AT PHILADELPHIA FOR PROMOTING USEFUL KNOWLEDGE.

VOL. XXXIV. DECEMBER, 1895. No 140.

Stated Meeting, May 17, 1895.

President, Mr. FRALEY, in the Chair.

Correspondence was submitted as follows:

A letter from the Academie R. des Sciences, Lisbon, Portugal, announcing the death of its Secretary, Prof. Manuel Pinheiro Chagas, April 8, 1895.

An invitation from the New Jersey Historical Society, Newark, to the American Philosophical Society, to participate in the celebration of its semi-centennial anniversary, Thursday, May 16, 1895.

Letters of envoy were received from the Observatoire Physique Central, St. Petersburg, Russia; Royal Statistical Society, Zoölogical Society, London, England; Massachusetts Institute of Technology, Boston.

Letters of acknowledgment were received from the R. Accademia dei Lincei, Rome, Italy (145); Botanical Society of Canada, Halifax, N. S. (146); Massachusetts Institute of Technology, Boston (111–114, 116–126); American Antiquarian Society, Worcester, Mass. (143, 146); University of the City of New York (143, 146); Mr. James C. Carter, New York, N. Y. (119, 143).

Accessions to the Library were reported from the Royal Asiatic Society (Straits Branch), Singapore; Government Museum, Madras, India; Institut Égyptien, Cairo; Société

Impériale des Naturalistes, Moscow, Russia, Comité Geologique Observatoire Physique Central, St Petersburg, Russia, Anthropologische Gesellschaft Vienna Austria, K P Geologische Landesanstalt und Bergakademie, Berlin, Prussia, Zoological and Geological Societies London, England Natural History Society, Montreal, Canada, Agricultural Experiment Station, Amherst, Mass, Messrs Wharton Barker, John F Lewis, Philadelphia, Agricultural Experiment Station, Agricultural College, Miss Texas Academy of Science, Austin, Observatorio Meteorologico Central Instituto Médico Nacional, Mexico Mexico Observatorio Astronomico y Méteorologico, San Salvador C A

A photograph for the Society s album was received from Mr Julius F Sachse, Philadelphia

The following deaths were announced

Prof Carl Vogt, Geneva, Switzerland b July 5 1817, d May 5, 1895

Hon Eckley B Coxe, Drifton, Pa b June 4, 1839, d May 18, 1895

After the reading of the minutes and the correspondence and donations, it was moved that the order of business be suspended in order that the election of members be proceeded with Carried

The names of the nominees were then read and spoken to

On motion, a recess was taken in order to give members an opportunity to vote

In accordance with the By Laws, the Secretaries acted as tellers for the election

After the recess, Mr C Stuart Patterson made a report from the Committee on the Henry M Phillips Prize Essay, and offered the following resolution

Resolved, That after the award signed by the judges to whom were referred the essays submitted under the terms of the circular of May 1 1893 in competition for the Henry M Phillips Prize shall have been presented to the President of the Society the sealed envelopes containing the names of the competitors shall be opened by the President and Treasurer of the Society, or either of them Carried

The following motion was offered by Mr. Price, and adopted:

Resolved, That when the official report and certificate of the Committee of Judges of the Henry M Phillips Prize Essays shall be received, and the President and Treasurer shall open the envelopes and find the name of the person entitled to the prize for the crowned essay, the Treasurer be authorized to pay him the prize of five hundred dollars from the Phillips Fund.

An obituary notice of Prof. Henry Coppée by Mr. J. G. Rosengarten was read by title.

An obituary notice of Dr. W. S. W. Ruschenberger was read by Dr. Brinton.

Mr. Bache read a paper for the *Proceedings* on "Personal Equation."

He said that, in order to fix the fact of his priority in what he believes to be the discovery, that personal equation, or relative reaction time of individuals, as it is variously called, is related to race, he should like to state the final results of some experiments which he has lately had made. From auditory, visual, and tactile tests, applied to thirty-three different individuals, represented by Whites, Indians and Negroes, divided into their three classes, consisting respectively of 12, 11, and 10 individuals, comprising in the aggregate 990 observations, giving the reaction time of these individuals by the several tests, as recorded by electro-magnetic apparatus, are derived the following final means, to the nearest thousandth of a second.

	AUDITORY.	VISUAL.	TACTILE.
White	147	165	136
Indian	116	136	115
Negro	130	153	123

The superior quickness of the Negro, as compared with the White is, therefore, so far as these figures show, given by the following figures of differences.

AUDITORY.	VISUAL.	TACTILE.
17	12	13

And the superior quickness of the Indian as compared with the Negro, by the following figures of differences

AUDITORY	VISUAL	TACTILE
14	17	8

Therefore the superior quickness of the Indian, as compared with the White, is shown by the observations to be represented by the following figures of differences

AUDITORY	VISUAL	TACTILE
31	29	21

Mr Bache went on to say that, as a paper by him on the subject had been sent to a scientific magazine for publication, he did not deem himself at liberty to add more than that he believes that, other things being equal, the lower the race the quicker is the reaction time He accounts, he said, for the superiority in quickness of the Indian over the Negro by recognizing that the life of the Indian for thousands of years promoted quickness of reaction, while that of the Negro has tended to slowness According to his view, he added, the more intellectual the development, the slower ought to be the reaction in all but the product of the higher thought So far as the observations presented show, the most intellectual of races, the White, exhibits by far the slowest reaction time

Dr. Cope read his paper on "The Pamunkey Formation of the Chesapeake Region and its Fauna," as announced

Dr Brinton described Mr Cushing's observations on the relics from the caves of France

Prof Cope made further observations on the subject

Dr Hartshorne made remarks on a recent visit he had made to the Ainos of Japan, supposed by many to have been the original inhabitants of the islands They are now rapidly dying out and are confined to the northern isles of the archipelago

Pending nomination No 1329 was read

Mr Du Bois made a verbal report from the Curators in reference to the collection of coins of the Society in deposit at the Pennsylvania Museum

Dr. Frazer moved that the Curators be requested to continue their identification and examination of the coins before taking a receipt from the Museum, with power to act when satisfied. Carried.

The Tellers reported that the following nominees had received the requisite number of votes, and were therefore duly elected:

No. 2253. M Georges Bertin, Paris, France.
No. 2254 Marshall D. Ewell, M.D , LL D., Chicago, Ill.
No. 2255. Clarence S Bement, Philadelphia.
No. 2256. George Tucker Bispham, Philadelphia.
No. 2257. Joel Cook, Philadelphia.
No. 2258. Hon. Mayer Sulzberger, Philadelphia.
No. 2259. Frederick D. Stone, Philadelphia.
No. 2260. James C. Carter, New York, N. Y.
No. 2261. Hon. Edward J. Phelps, New Haven, Conn.
No. 2262. Hon. George F. Edmunds, Burlington, Vt.
No. 2263. Hon J. Randolph Tucker, Lexington, Va.
No. 2264. M. Marcelin Berthelot, D. es Sc., Paris, France.
No. 2265. E. S. Morse, Salem, Mass.
No. 2266. Paul Heyse, Munich, Bavaria.
No. 2267. Paolo Montegaze, Firenze, Italia.
No. 2268. F. W. Putnam, Salem, Mass.
No. 2269. Mrs. Zelia Nuttall, Dresden, Saxony.
No. 2270. Augustus F. Franks, London, England.
No. 2271. George Ebers, Berlin, Prussia.
No. 2272. A. Marshall Elliott, Baltimore, Md.
No. 2273. Jean Léon Gérome, Paris, France.
No. 2274. Willard Gibbs, Ph.D., New Haven, Conn

After which the Society was adjourned by the President.

Stated Meeting, September 6, 1895

Mr HAROLD GOODWIN, in the Chair

Present, 6 members

Correspondence was submitted as follows

Letters acknowledging election to membership from Mrs Zelia Nuttall, Dresden, Saxony, Dr George Ebers, Berlin, Prussia, Dr Paul Heyse, Munich, Bavaria, Prof Paolo Montegaze, Florence, Italy, Dr M Berthelot Paris France, Hon George F Edmunds Burlington, Vt, Prof F W Putnam, Cambridge, Mass, Prof E S Morse, Salem, Mass, Prof J Willard Gibbs, New Haven, Conn, Hon Edward J Phelps, New Haven, Conn, Mr James C Carter, New York, N Y, Mr George Tucker Bispham, Philadelphia, Pa, Mr Joel Cook, Philadelphia, Pa, Mr Frederick D Stone, Philadelphia, Pa, Hon Mayer Sulzberger, Philadelphia, Pa, Mr A Marshall Elliott, Baltimore, Md, Hon J Randolph Tucker, Lexington, Va, Dr Marshall D Ewell, Chicago, Ill

Letter of resignation from Mr Henry W Spangler, Philadelphia, Pa

A letter from the K Leopoldinisch Carolinische Akademie, Halle a S, July 1, 1895, announcing the death of its President, Prof Dr Hermann Knoblauch, June 30, 1895, in his seventy sixth year

A letter from the Physikalisch Okonomische Gesellschaft, Konigsberg, i Pr, May 24, 1895, announcing the death of its honorary President, Prof Dr Franz Ernst Neumann, May 23, 1895

Letters of envoy were received from the Geological Survey of India, Calcutta Naturforscher Gesellschaft, Dorpat, Russia; Naturforschende Verein, Brunn, Austria, Geologische Reichsanstalt, Vienna, Austria, K Sachsische Gesellschaft der Wissenschaften, Leipzig, K Geodatisches Institut, Potsdam, Prussia, Verein fur Vaterlandische Naturkunde in Wurttemberg, Stuttgart, Faculté des Sciences, Marseille, France, Musée Guimet, Bureau des Longitudes, Société Géologique de France, Paris, France; Royal Observatory, Greenwich, Eng.; Royal Statistical Society, Zoological Society, Meteorological Office, London, Eng; Mr. Samuel A. Green, Boston, Mass; Geological Society of America, Rochester, N. Y; University Extension Society, Philadelphia; Johns Hopkins University, Baltimore, Md.; Treasury Department, Washington, D C.; Library of University of California, Berkeley; Musée de La Plata, Argentine Republic, S. A.

Letters of acknowledgment (*Transactions*) were received from the Société Géologique de France, Paris (i–xiii, xiv, 1, 2; xv, 1, 2); Geological Survey of Canada, Ottawa (xviii, 2); Public Library, Boston, Mass. (xviii, 2); Museum of Comparative Zoölogy, Cambridge, Mass. (xviii, 2); American Antiquarian Society, Worcester, Mass. (xviii, 2); Yale University, New Haven, Conn. (xviii, 2); Historical Society, New York (xviii, 2); Franklin Institute, Academy of Natural Sciences, Library Company of Philadelphia, Philadelphia (xviii, 2); Smithsonian Institution (113 pks.), U. S. Geological Survey, Washington, D. C. (xviii, 2); University of California, Berkeley (xviii, 2); State Historical Society of Wisconsin, Madison (xviii, 2); Kansas Academy of Science, Topeka (xviii, 2).

Letters of acknowledgment were received from Royal Geographical Society, Brisbane, Queensland (142, 144); Linnean Society of N. S. Wales, Elizabeth Bay, Sydney (145); Tokyo Library, Tokyo, Japan (142, 144, 145), Musée Polytechnique, Société Imp. Amis des Sciences Naturelles, etc, Moscow, Russia (143, 146); Central Physical Observatory, Royal Public Library, St. Petersburg, Russia (143, 146); Astronomical Observatory, Tashkent, Russia (143, 146); Norske Universitets Bibliothek, Christiania, Norway (143, 146); Bureau Central de Statistique, Stockholm, Sweden (143, 146); K. Danske Videnskabernes Selskab (143, 145, 146), Prof. Japetus Steenstrup (143, 146), Copenhagen, Denmark; R. Zoölogical Society, Amsterdam, Netherlands (143, 146); K. Bibliotheek, K. Zoöl.-Botanische Genootschap, The Hague, Netherlands (143, 146); Musée Teyler, Musée Colonial, Harlem, Netherlands (143, 146); Société R. de Géographie, Antwerp, Belgium

(143, 146), Musée R d Histoire Naturelle de Belgique, Bruxelles (143, 146), Naturforschende Verein Brunn, Austria (142, 144), K K Sternwarte, Prag, Austria (143, 146) K K Naturhistorisches Hofmuseum (145) Dr Aristides Brezina (143, 146), Franz v Hauer (143–146) Vienna, Austria, Naturforschende Gesellschaft, Schweiz Naturforsch Gesellschaft, Bern, Switzerland (143, 146), Mr H de Saussure Geneva, Switzerland (143, 146) Prof E Renevier, Lausanne, Switzerland (143, 145 146), R Istituto di Studi Superiore, Firenze, Italia (143, 146), R Istituto Lombardo, Milano, Italia (145), Societa Africana, Napoli Italia (125, 126 143, 144, 146), R Comitato Geologico (145), Prof Guiseppe Sergi (143 145, 146), Roma, Italia R Osservatorio, Prof Guido Cora, Torino, Italia (145), Naturforschende Gesellschaft des Osterlandes, Altenburg, Germany (143, 146), Redaction der *Naturwissenschaftlichen Wochenschrift* (145), Gesellschaft fur Erdkunde, K P Akademie d Wissenschaften (143, 146), Berlin, Prussia, K Universitats Bibliothek, Bonn, Prussia (143, 146), Naturwissenschaftlicher Verein, Bremen, Germany (143, 146), K Sachs Meteorolog Institut, Chemnitz Saxony (143 146), K Sachs Alterthumsverein (143, 145, 146), Verein f Erdkunde (143, 145), Dresden, Saxony, Naturforschende Gesellschaft, Emden, Prussia (143, 146), Physikalisch Medicinische Societat, Erlangen, Bavaria (142–146), Senckenbergische Naturforschende Gesellschaft, Frankfurt a M (143), Naturforschende Gesellschaft, Freiburg i B (143, 146), Oberhessische Gesellschaft fur Natur und Heilkunde, Giessen, Germany (143, 146) Geographische Gesellschaft, Hamburg, Germany (143, 146), Geographische Gesellschaft, Hannover, Prussia (144, 145), Astronomische Gesellschaft (143, 145, 146), K Sternwarte (143, 145, 146), M Otto Bohtlingk, Prof I Victor Carus, Dr Caspar René Gregory, Leipzig, Saxony (143, 146), Verein fur Erdkunde, Metz, Germany (143, 146), Naturhistorische Gesellschaft, Nurnberg, Bavaria (143), K P Geodatische Institut, Potsdam, Prussia (143, 146), Verein fur Vaterlandische Naturkunde, Stuttgart, Wurttemberg (142–146), Prof F von Sandberger, Wurzburg, Bavaria (143, 146), Académie des Sciences, etc , Angiers, France (145); Société des Sciences, Physiques, etc , Bordeaux, France (143–146); Société de Sciences Naturelles et Archéologiques de la Creuse, Guéret, France (143); Bibliotheque Universitaire, Lyons, France (143); Sociétés de Géographie, Géologique, d'Histoire, Physique, "Le Cosmos," Musée Guimet (143, 146), Museum d'Histoire Naturelle (141, 143, 146), École Polytechnique (144–146), Bureau des Longitudes (145), Prof. A. Daubrée (143, 146), Dr. E. T. Hamy (139–146), Prof. Abel Hovelacque (143, 146), Prof. E. Mascart (143, 146), Dr. Edward Pepper (143, 146), Paris, France; Mr. Lucien Adam, Rennes, France (143, 146); Société des Antiquaires de la Morinie, St. Omer, France (143, 146), Mr. Samuel Timmins, Arley, Coventry, Eng (143, 146); University Library, Cambridge, Eng (143, 146); Mr. Alfred R. Wallace, Parkston, Dorset, Eng. (143), R. Cornwall Polytechnic Society, Falmouth, Eng (143, 146); Linnean Society, Royal Society, Meteorological, Astronomical, Statistical Societies, Society of Antiquaries, Royal Institution, R Geographical Society, Victoria Institute (143, 146), Geological Society of London (143), Chemical Society (140–146), Prof. William Crookes (143, 146), Mr. Juhlin Daunfelt (143, 146), Mr W. H. Flower (143, 146), Sir James Paget (143), Sir Rawson W. Rawson (143, 146), Sir Henry Thompson (146), Prof. W. C. Unwin (143, 146), London, Eng.; Geographical Society, Literary and Philosophical Society, Prof. W. B. Dawkins, Manchester, Eng. (143, 146); Natural History Society, Literary and Philosophical Society, New Castle u. T., Eng. (143, 146); Radcliffe Observatory, Sir H. W. Acland, Oxford, Eng. (143, 146); R. Geological Society of Cornwall, Penzance, Eng. (143, 146); Sir Henry Bessemer, Surrey, Eng. (143, 146); Dr. Isaac Roberts, Starfield, Crowborough, Sussex, Eng. (143, 146); Geological and Polytechnic Society, Yorkshire, Eng. (143, 145, 146); Royal Society, Prof. James Geikie, Edinburgh, Scotland (143, 146); Philosophical Society, Glasgow, Scotland (143, 146); Natural History and Philosophical Society, Belfast, Ireland (142, 144, 145); Royal Dublin Society, Dublin, Ireland (143, 146); Mass. Institute of Technology, Boston

(*Catalogue*, Parts i–iv), Prof M H Boyé, Coopersburg, Pa (142), Lackawanna Institute of History and Science, Scranton, Pa (144), Prof Daniel Kirkwood, Riverside, Cal (146), Ohio State Archæological and Historical Society, Columbus (143 146), Prof G W Hough, Evanston, Ill (142), Museo de la Plata La Plata Argentine Republic (145, and *Catalogue*, Parts iv), Istituto Fiseco Geographico Nacional, San José de Costa Rica, C A (142, 144, 145)

Letters of acknowledgment (147) were received from the Franklin Institute, Historical Society of Pennsylvania, Numismatic and Antiquarian Society, Library Company of Philadelphia, Academy of Natural Sciences, Wagner Free Institute of Science, Free Library of Philadelphia, Profs John Ashhurst, Jr, John H Brinton, F A Genth, Jr, Lewis M Haupt, H V Hilprecht, J P Lesley, Drs Morris Longstreth, Charles A Oliver, C N Peirce, Charles Schäffer, H Clay Trumbull, Messrs R L Ashhurst, Cadwalader Biddle, Arthur E Brown, Charles Bullock, Joel Cook, Patterson Du Bois, Jacob E Eckfeldt Robert Patterson Field, Benjamin Smith Lyman, James T Mitchell, Franklin Platt, J Sergeant Price, Theo D Rand, J G Rosengarten, Julius F Sachse, L A Scott, Coleman Sellers, F D Stone, Mayer Sulzberger, L Vossion, Samuel Wagner, Joseph Wharton, Talcott Williams, Mrs Helen Abbott Michael, Philadelphia, Prof John F Carll, Pleasantville, Pa, Mr Heber S Thompson, Pottsville, Pa, Rev F A Muhlenberg, Reading, Pa, Lackawanna Institute of History and Science, Scranton, Pa, Mr Thomas S Blair, Tyrone, Pa Dr John Curwen, Warren, Pa, Philosophical Society, Hon William Butler, Prof J T Rothrock, Mr Philip P Sharples, West Chester, Pa, Col Henry A DuPont, Montchanen, Del, U S Naval Institute, Annapolis, Md, Maryland Institute for the Promotion of the Mechanic Arts, Enoch Pratt Free Library, Baltimore, Md, U S Coast and Geodetic Survey, U S Geological Survey, Prof S F Emmons, Dr W J Hoffman, Profs C V Riley, Charles A Schott, Washington, D C, Mr Jedediah Hotchkiss, Staunton, Va, Prof J W Mallet, University of Virginia, Va, Prof I

C. White, Morgantown, W. Va.; Agricultural Experiment Station, Raleigh, N. C.; Georgia Historical Society, Savannah; Experiment Station, Agricultural College, Miss., Athenæum Library, Columbia, Tenn.; Agricultural Experiment Station, Knoxville, Tenn; Texas Academy of Science, Austin; University of California, Berkeley; Historical Society of Southern California, Los Angeles; Lick Observatory, Mt. Hamilton, Cal.; Historical Society, Academy of Sciences, San Francisco, Cal; Prof. J. C. Branner, Stanford University, Cal; Agricultural Experiment Station, Agricultural College, Mich.; Astronomical Observatory, Cincinnati, O.; Archæological and Historical Society, Columbus, O; Editors of *Journal Comparative Neurology*, Granville, O; State Historical Society of Wisconsin, University of Wisconsin, Academy of Sciences, etc., Madison, Wis.; Indiana Society of Civil Engineers, etc, Remington; Field Columbian Museum, Dr. M. D. Ewell, Chicago, Ill.; Prof. G. W. Hough, Evanston, Ill.

Accessions to the Library were reported from the Royal Society of South Australia, Adelaide; Linnean Society of N. S. Wales, Sydney; Tokyo Library, Tokyo, Japan; Institut Egyptien, Cairo; Naturforscher Gesellschaft, Dorpat, Russia; Société des Naturalestes, Kiew, Russia; Naturforscher Verein, Riga, Russia; Société Imp. Mineralogique, St. Petersburg, Russia; Bat. Genootschap van Kunsten en Wetenschappen, Batavia, Java; Koloniaal Museum, Haarlem, Holland; K. Bibliotheek, 's Gravenhage, The Hague; Société R. de Geographie, Anvers, Belgique; Société Belge de Geologique, M. O. Klement, Bruxelles, Belgique; Naturforschende Verein, Brünn, Austria; K. Sternwarte, Gesellschaft der Wissenschaften, Prag, Bohemia; K. K. Geologische Reichsanstalt, Vienna, Austria; Botanische Verein der Provinz Brandenburg, Verein zur Beforderung des Gartenbaues in den K. P. Staaten, K. P. Meteorologisches Institut, Berlin, Prussia; Naturwissenschaftlicher Verein, Bremen, Germany; Naturwissenschaftliche Gesellschaft "Isis," Dresden, Saxony; K. Akademie, Erfurt, Prussia; Deutsche Seewarte, Hamburg, Germany; Physikalisch-Okonomische Gesellschaft, Königsberg, Prussia, Dr Otto Kuntze, Leipzig, Saxony, Institut Grand ducal Luxembourg, Germany, Geographische Gesellschaft, Munich, Bavaria, Internationale Erdmessung, Potsdam, Prussia Vaterländische Naturkunde in Wurttemberg Stuttgart, R Accademie di Scienze, Lettere ed Arti, Modena, Italy, Ministero di Agricoltura, etc, R Comitato Geologico, Rome, Italy R Accademia delle Scienze, Turin, Italy, R Istituto Veneto, Venice Italy Académie des Sciences et Belles Lettres, Angers, France Société Linnéene de France, Academie des Sciences, etc, Bordeaux, France, Academie N des Sciences, Arts etc, Caen, France, Union Geographique du Nord de la France, Donai, France Société Geologique de Normandie, Havre, France, Faculté des Sciences, Marseille France, Société Géologique de France, Société de l Histoire de France, Musée Guimet, Societe Zoologique de France, Société d Anthropologie, Museum de l'Histoire Naturelle, Prince Napoleon Bonaparte, M E Levasseur, Paris, France, Société de Geographie, Toulouse, France, R Academia di Ciencias y Artes, Barcelona, Spain, Instituto y Observatorio de Marina, San Fernando, Spain, University Library, Cambridge, Eng, R Cornwall Polytechnic Society, Falmouth, Eng, Royal Observatory, Greenwich Eng, Yorkshire Geological and Polytechnic Society, Halifax, Eng, Royal Institution, Meteorological Office, Meteorological Council, Linnean Society, Messrs James L Bowes, Joseph Prestwich, London, Eng, Royal Society, Edinburgh, Scotland, Geological Survey of Canada, Ottawa, Society of Natural History, Portland, Me, N H Historical Society, Concord, Mass Historical Society, Public Library, American Congregational Assn, Mr F Walter Fewkes, Dr Samuel A Green, Boston, Mass, Free Public Library, New Bedford, Mass, American Antiquarian Society, Worcester, Mass, Academy of Arts and Sciences, New Haven, Conn, Buffalo Library, Historical Society, Buffalo, N Y, American Museum of Natural History, Academy of Medicine, New York, N Y, Geological Society of America, Rochester, N. Y, Pennsylvania State College, Harrisburg, Pa, Zoological Society, American Society Extension University Teaching, Wagner Free Institute, Board of Directors of City Trusts, Messrs. Wharton Barker, E. D. Cope, B. S. Lyman, Philadelphia; Hospital for the Insane, Warren, Pa.; Maryland Academy of Sciences, Peabody Institute, Baltimore, Md.; U. S. Departments of Agriculture, the Treasury, and of the Interior, Bureau of Ethnology, Chief of Engineers, Mr. Frederick Webb Hodge, Washington, D. C, University of Virginia, Charlottsville; Tulane University, New Orleans, La.; Academy of Sciences, San Francisco, Cal., Academy of Science, St. Louis, Mo.; State Historical. Society, Madison, Wis.; Michigan Mining School, Houghton; State Historical Society, Iowa City, Ia.; Colorado Scientific Society, Denver, Kansas State Historical Society, Academy of Sciences, Topeka, Kans.; Agricultural Experiment Stations, Storrs, Conn, Newark, Del, Madison, Wis., Brookings, S Dak; Commission Geológica, Mexico, Mex.; Museo de la Plata, La Plata, Argentine Republic.

A photograph of the Boulder Clay Cliffs, Carr Naze, Filey, from the Yorkshire Geological and Polytechnic Society, Halifax, Eng.

A large framed photograph of Hon. Richard Vaux from Mr. F. Gutekunst, Philadelphia.

Photographs for the Society's Album of Prof. Edward North, Clinton, N. Y.; Dr. James E. Oliver, Ithaca, N. Y.; Prof. Henry Coppée, Bethlehem, Pa.

The following deaths were announced:

Prof. Franz Josef Lauth, Munich, Bavaria.

Daniel Kirkwood, LL.D., Riverside, Cal., June 11, 1895, æt. 80.

Henry Phillips, Jr., Philadelphia, June 6, 1895, æt. 56.

Henry H. Houston, Philadelphia, June 21, 1895, æt. 74.

Peter F. Rothermel, Linfield, Pa., August 15, 1895, æt. 83.

Dr. Persifor Frazer then read an obituary notice of Edward Y. Macauley, U. S. N.

Mr. B. S. Lyman read papers on the "Yardley Fault," and the "Chalfont Fault Rock, so-called."

Dr. Frazer commented on some of the views expressed, and further explanation was made by Mr. Lyman.

Mr. Prime gave his observations at Chalfont.

Pending nominations Nos. 1329 and 1330 were read, and after reading the rough Minutes the Society was adjourned by the presiding member.

Stated Meeting, September 20, 1895.

Mr. Goodwin in the Chair.

Present, 7 members.

Correspondence was submitted as follows:

Acceptance of membership from Mr. Clarence S. Bement, Philadelphia, September 7, 1895.

Letters of envoy from the Adelaide Observatory, Adelaide, South Australia; Fondation de P. Teyler van der Hulst, Haarlem, Holland.

Letters of acknowledgment from the R. Geographical Society, Brisbane, Queensland (145); Public Library, Wellington, N. Z. (142, 144, 145); Geological Survey of India, Calcutta (143, 145, 146); Phys. Mathematical Society, Kasau, Russia (143, 146); Maatschappij der Nederlandsche Letterkunde, Leiden, Z. Holland (143, 146); K. K. Militar-Geographische Institut (143, 146), Section für Naturkunde des O. T. C. (143), Dr. Friedrich Müller (143, 146), Vienna, Austria; Naturhistorische Verein, Bonn, Prussia (143, 146); Schlesische Gesellschaft für vaterl. Cultur, Breslau, Prussia (143, 146): Dr. Albin Weisbach, Freiberg, Saxony (143, 146); Geographische Gesellschaft, Hannover, Prussia (141, 143, 146); Istituto Veneto de Scienze Lettere, etc., Venezia, Italia (143, 146); University Library, Cambridge, Eng. (147); Literary and Philosophical Society, Liverpool, Eng. (143, 146); Literary and Philosophical Society, Manchester, Eng. (*Trans.* xviii, 2).

Letters of acknowledgment (147) from the Victoria Institute, London, Eng.; Literary and Philosophical Society, Manchester, Eng.; Nat. Hist. Society, Northumberland, Durham, etc., Literary and Philosophical Society, New Castle u.T., Eng.; Mr. Horatio Hale, Clinton, Ontario, Canada; Geological Survey, Ottawa, Canada; Laval University, Hon. J. M. Le Moine, Quebec, Canada; Society of Natural History, Portland, Me.; N. H. Historical Society, Concord; Prof. C. H. Hitchcock, Hanover, N. H.; Experiment Station, Hon George F. Edmunds, Burlington, Vt., State Library, Mass. Historical Society, Athenæum, Public Library, Boston, Mass.; Museum of Comp. Zoölogy, Mr. Robert N. Toppan, Dr. Justin Winsor, Profs. A. Agassiz, Alpheus Hyatt, F. W. Putnam, Cambridge, Mass.; Essex Institute, Salem, Mass.; Prof. Elihu Thomson, Swampscott, Mass.; Marine Biological Laboratory, Wood's Holl, Mass.; Brown University, R. I. Historical Society, Providence Franklin Society, Providence, R. I.; Mr. George F. Dunning, Farmington, Conn.; Conn. Historical Society, Hartford; Yale University, N. H. Colony Hist. Society, Prof. J. Willard Gibbs, New Haven, Conn.; Buffalo Library, Society of Sciences, Buffalo, N. Y.; Profs. T. F. Crane, W. T. Hewett, B. G. Wilder, Ithaca, N. Y.; Historical Society, Amer. Museum Nat. History, N. Y. Hospital Library, Academy of Sciences, Amer. Institute of Electrical Engineers, Columbia College, Academy of Medicine, Hon. James C. Carter, Hon. Charles P. Daly, Profs. Joel A. Allen, Isaac H. Hall, J. J. Stevenson, Dr. Daniel Draper, New York, N. Y.; Vassar Brothers' Institute, Poughkeepsie, N. Y.; Academy of Science, Geological Society of America, Rochester, N. Y.; Oneida Historical Society, Utica, N. Y.; Free Public Library, Jersey City, N. J.; Profs. W. Henry Green, C. A. Young, Princeton, N. J.; Dr. Robert H. Alison, Ardmore, Pa.; Dr. Charles F. Himes, Carlisle, Pa.; Prof. M. H. Boyè, Coopersburg, Pa.; Amer. Academy of Medicine, Prof. J. W. Moore, Rev. Thomas Conrad Porter, Easton, Pa.; Mr. John Fulton, Johnstown, Pa.; Linnean Society, Lancaster, Pa.; Mr. Thomas Meehan, Germantown, Phila.; Mr. Samuel Dickson, Philadelphia; Wyoming and Geological Society, Wilkesbarre, Pa.;

Lackawanna Institute of History and Science, Scranton, Pa.; University of Virginia, U. of Va. P. O; Literary Society, Rantoul, Ill; Academy of Natural Sciences, Davenport, Ia; State Historical Society, Iowa City, Ia.; Kansas Academy of Science, State Historical Society, Topeka, Kans.; Prof. H. T. Eddy, Minneapolis, Minn.; Colorado Scientific Society, Denver, Nebraska State Historical Society, Experiment Station, Lincoln, Neb.; University of Arizona, Tucson; Academy of Science, Tacoma, Wash.; Observatorio Meteorologico Magnetico, Mexico, Mex.; Meteorologial Observatory, Xalapa, Mexico; Bishop Crescencio Carrello, Merida, Yucatan.

Accessions to the Library were reported from the Adelaide Observatory, Adelaide, S. Australia; Royal Society of Victoria, Melbourne; New Zealand Institute, Wellington; K. Norske Videnskabers Selskabs, Throndhjem, Norway; K. Akademie der Wissenschaften, Berlin, Prussia; Verein fur Naturkunde, Offenbach a M, Germany, Mr. Charles Sedelmeyer, Paris, France; Royal Society of Canada, Ottawa; Mr. Benjamin Smith Lyman, Philadelphia; U. S. Geological Survey, Washington, D. C.; Lick Observatory, Mt. Hamilton, Cal.

The death of Dr. Charles V. Riley, Washington, D. C., September 14, 1895, æt. 52, was announced.

Prof. Cope exhibited a number of teeth and some ungual phalanges of individuals of Mylodon from the salt deposit of Petite Anse, Louisiana. He remarked that remains of *Mylodon harlanii* were rather abundant, and that the present specimens indicated two additional species of the genus. One of these is of small size, the animal having had probably not over half the bulk of the *M. harlanii*. It is represented by a right maxillary bone, with teeth in place, and a series of inferior molars of a second individual. The first-named specimen gives the first information as to the structure and positions of the superior molars in a North American species of the genus. It shows that both of the latter differ considerably from the South American forms. The large and small North American species differ also in the forms of both the superior and inferior molars. To the latter Prof. Cope gave the name of *Mylodon renidens*. Some separate teeth differ from those of both species, but one of the inferior molars resembles nearly that of the small species. This he regarded as a third species, and to it he gave the name of *Mylodon sulcidens*. It is of about the same size as the *M. harlanii*. He promised a detailed paper on these forms at a future meeting.

Treasurer J. Sergeant Price presented the following:

> *Whereas*, Mr. Henry Phillips, Jr., our late Librarian, died June 6, 1895, subsequent to the adjournment of our Society for the summer, and
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> *Whereas*, Our President and the Chairman of the Committee on Hall of the Society felt it important to have some one take immediate charge of the building and Library, and having much to their gratification found that Dr. George H. Horn, one of our Secretaries, would have leisure to fill the office, did, with the approval of such members as could be seen, appoint him Librarian *pro tem.*, till the vacancy could be filled by the Society; therefore
>
> *Resolved*, That the action of said officers be approved by the Society, and that Dr. Horn be continued as such Librarian until the next annual election for Librarian, in January, 1896.

On motion, the resolution was unanimously adopted.

Pending nominations Nos. 1329 and 1330 were read, when, after the reading of the rough minutes, the Society was adjourned by the presiding member.

Stated Meeting, October 4, 1895.

President, Mr. Fraley, in the Chair.

Present, 12 members.

Correspondence was submitted as follows:

Letters of acknowledgment from the Royal Society of Victoria, Melbourne (145); K. Norske Videnskabers Selskab, Throndhjem (145); Dr. O. Donner, Helsingfors, Finland (143, 146); K. Statistiska Central Byrån, Stockholm, Sweden (147); Dr. Fried. S. Krauss, Vienna, Austria (143, 146); Prof. Dr. Reuleaux, Berlin, Prussia (143, 146); Naturhistorische Gesellschaft, Hannover, Prussia (143, 146); Dr. Charles A. M. Fennell, Cambridge, Eng. (147); Linnean Society (147), Royal Society, R Statistical Society, Geological Society (*Trans.* xviii, 2 and 147), Sir James Paget, London, Eng. (147); Geographical Society, Manchester, Eng. (147); Sir William G. Armstrong, Cragside, Rothbury, Eng. (143, 144, 146), Dr. Isaac Roberts, Starfield, Crowborough, Sussex, Eng. (147); Royal Society, Edinburgh, Scotland (*Trans*, xviii, 2 and 147); Philosophical Society, Lord Kelvin, Glasgow, Scotland (147); Prof J. M. Hart, Ithaca, N. Y. (147); Prof. Robert W. Rogers, Madison, N. J. (147).

Accessions to the Library were reported from the Geographical Society, Tokyo, Japan; Ponasang Missionary Hospital, Foochow, China; Académie R. des Sciences, Stockholm, Sweden, Wetterauische Gesellschaft fur die Gesammte Naturkunde, Hanau, Germany; Roemer Museum, Hildesheim, Prussia; Société Fribourgeoise des Sciences Naturelles, Fribourg, Switzerland; Société de Physique, Geneva, Switzerland, Rousdon Observatory, Devon, Eng.; Philosophical and Literary Society, Leeds, Eng; Université Laval, Quebec, Canada; Tufts College, Mass.; Rev. Frank P. Manhart, Philadelphia; War Department, Washington, D. C.; Agricultural Experiment Station, Columbia, Mo; Newberry Library, Springfield, Ill; Prof. Herman Haupt, St. Paul, Minn.; Comisión Geológica Mexicana, Mexico, Mex.

The death of Prof. Louis Pasteur, Paris, France—d. September 28, 1895, b. December 27, 1822—was announced.

Prof. Cope reported the recent discovery of Permian Reptilia in Texas.

Mr. Williams made the following motion:

Resolved, That a Committee of five members be appointed to consider the expediency of preparing a plan of a coöperative Index of all *Transactions*, and if expedient to report such a plan to the Society" (see Minutes, October 6, 1893).

Resolution was agreed to.

Pending nominations Nos. 1329 and 1330 were read.

And the Society was adjourned by the President.

Stated Meeting, October 18, 1895.

President, Mr. FRALEY, in the Chair.

Present, 22 members.

Correspondence was submitted as follows:

A letter from Sir A. Wollaston Franks, London, England, October 3, 1895, accepting membership.

A letter of envoy from Mr. Jules Viennot, Philadelphia.

Letters of acknowledgment from the Naturforschende Gesellschaft, Bamberg, Bavaria (143, 146); Naturwissenschaftlicher Verein, Bremen, Germany (147), Royal Meteorological Society, London, England (147); Prof. James Geikie, Edinburgh, Scotland (147); Sociedad Cientifica "Antonio Alzate," Mexico, Mex. (147).

A photograph for the Society's Album was received from Mr. Augustus R. Grote, Hildesheim, Prussia.

The death of Dr. John G. Morris, Lutherville, Md., October 10, 1895, æt. 92, was announced.

The President announced the following appointments to prepare obituary notices: Prof. A. H. Smyth for Henry Phillips Jr; A. J. Cassatt for Henry H. Houston; J. G. Rosengarten for P. F. Rothermel.

In the absence of a quorum, the election for members was, on motion, postponed until later.

Dr. Frazer called attention to the omission of any record of the report of progress of his committee to examine methods employed in the study of handwriting, from the minutes of the meeting of September 6, and requested the decision of the President regarding the correction of the minutes.

The President decided that corrections of the minutes should be made either at the meeting to which they refer or at the next subsequent meeting.

A communication from Prof. A. R. Grote, entitled, "On Apatela," was read by title and referred to the Secretaries.

A quorum of the Society being present, nominations 1329 and 1880 were read and spoken to, and the Society proceeded to ballot

The Tellers having announced that their report on the ballot was ready, the President instructed them to present it The report declared the following persons duly elected members

2275 Albert P Brubaker M D Philadelphia
2276 Sara Yorke Stevenson Sc D Philadelphia

The rough minutes were then read and the Society adjourned by the President

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Memoir of James E Rhoads M D LL D

By Dr Henry Hartshorne

(Read before the American Philosophical Society May 3 1895)

James E Rhoads was born at Marple Delaware county Pennsylvania January 21 1828 His parents on both sides were of recorded descent from ancient families of rank and position in England and Wales From the earliest rise of the religious Society of Friends in Great Britain both the Rhoads and Evans (his mother s) families have been members of that small but influential body and for several generations in Philadelphia some of them have been among its most prominent ministers and members Seldom have the tendencies of heredity under favorable conditions been more beneficially shown than in the history of such families as these through more than two hundred years While in Europe titled descent is not unfrequently attended by physical mental and moral degeneration blood tells and few finer examples of human development exist than those of men and women who through a long series of generations have enjoyed in town and country the means of comfortable though not luxurious living with education a measure of social refinement and the preservative atmosphere of religious motives and contemplation

James E Rhoads received his academic education at Westtown School Pennsylvania a denominational institution of the Society of Friends He chose the medical profession for his vocation and entered upon its study with his uncle Dr Charles Evans of Philadelphia For one or two years he also gave a portion of his time as a teacher in a Friends school in this city

Graduating in medicine at the University of Pennsylvania in 1851 for a short period he had charge of the Philadelphia Dispensary

In 1859 he entered the Pennsylvania Hospital as Resident Physician, and remained there till 1854. The death of Dr Ashmead, the leading practitioner of medicine in Germantown, Phila, made an opening in that place, which induced Dr Rhoads to begin general practice there Having all the qualities and preparation needful for the make-up of a successful physician, in the midst of a growing population, including some of the most cultivated people of the neighborhood of Philadelphia, he obtained rapidly a large and engrossing practice. In 1860, he married Margaret W Ely, of New Hope, Pa, who survives him, with two daughters and a son.

One limitation, which could not be called a fault, existed in Dr Rhoads' adaptation to medical practice He was too absolutely self-forgetful for long continued endurance, too sympathetic not to be worn by the sufferings of others, too ready to answer every call to obtain for himself sufficient rest In 1862, his health and strength gave way, and he sought recuperation in a six months' tour in Europe That time, however, was not enough for a full restoration of his constitutional energy; and he found it necessary to retire altogether from medical practice

Incapable of idleness, philanthropy soon gave him abundant occupation The Civil War and its results made the Southern freedmen objects of active solicitude among benevolent people in the North Dr. Rhoads was one of the earliest and foremost of those who, by visitation, instruction and earnest advocacy at home, promoted the advancement of the colored people in every way. At Washington, in Hampton, Virginia, and in Philadelphia, he was among the freedmen's most devoted and practically useful friends.

When General Grant inaugurated his policy of justice and kindness towards the Indians of our Western country, a leading part in its realization fell to the Quakers of the State founded by William Penn, as well as to members of the same religious body in the Western States In this work Dr Rhoads took a large part, during all the latter part of his life The several local organizations of the Society of Orthodox Friends formed, by delegations, an Associated Executive Committee on Indian Affairs. Of this body Dr. Rhoads was, from the start and for many years, the Secretary, virtually its presiding officer. More than half of all the important work of that Committee rested with him; consisting of the supervision of educational, missionary and other labors for the benefit of the Indian tribes, the record of which might fill a volume He was also for several years President of the Indian Rights Association, whose headquarters are in Philadelphia, its active labors on behalf of the Indians, both at Washington and in the far West, being of great importance for their welfare.

In 1876, Dr. Rhoads was called upon to edit a denominational weekly journal in Philadelphia, the *Friends' Review*. The religious as well as literary aims of that periodical accorded well with his predilections For a number of years he had taken part, with much acceptance, as a preacher, in the congregations of the Society of Friends. Although not officially recorded as a minister, in the manner customary in that denomination, he gave demonstration of his eminent qualification for such service.

In 1883, he was appointed President of Bryn Mawr College for Women; of which he had been already one of the original Board of Trustees. This college was founded by means of a liberal endowment left for it by Dr. Joseph W. Taylor, who during his lifetime chose for it an admirable situation a few miles from Philadelphia, and began the construction of its principal buildings. The selection of Dr. James E Rhoads for the office of its first President was greeted on all sides as the best that could have been made. Although not himself a college graduate, he had long been one of the managers of Haverford College, a kindred institution for young men, and his fine intellectual qualities, broad culture, and still more, his elevated, attractive and inspiring personal character, made him peculiarly adapted to such a position. Opened for students with a well-chosen faculty in 1885, Bryn Mawr College rapidly grew in favor and prosperity. Halls and dormitories have, year after year, been added for the accommodation of its students, of whom now nearly three hundred are engaged in advanced studies under competent instructors.

At the time when the organization of this college was effected, the higher education of women was still in a comparatively early stage of development; and the theory of curricular arrangement in colleges for men was undergoing revision, and, in most places, revolutionary change. With a new institution, the question was open: Shall it be, in its plan of study and instruction, constructed on the old basis of uniform and symmetrical culture, maintaining the principle that, as judged by the experience of ages, there is one culture better than all others for students of the collegiate age, leaving free selection and specialization for the postgraduate work in universities or elsewhere; or shall the newer principle of free electivism be adopted, providing for undergraduates a number of optional courses, such as are now offered at Harvard, Johns Hopkins and nearly all the other colleges of the United States?

As two of the Trustees of Bryn Mawr College, appointed by Dr. J. W. Taylor for that duty in his will, were also members of the Board of Trustees of Johns Hopkins University in Baltimore, it was not strange that the new college for women should follow closely in the line of its development. A "group system" of classified studies was adopted, including some branches which have mostly, hitherto, been regarded as better suited for special postgraduate work than for the general training of youth of either sex before maturity.

While there is room for diverse opinions in regard to the extent to which this now prevailing change in college curricula has been carried, it is certain that it is prevailing; and from no standpoint can fault be found with a new institution for women, because it followed in the wake of the most honored universities, the oldest and the newest, in this country. On the line of development thus chosen, Bryn Mawr College has

Wm Pepper

met with success and distinction Along with Vassar, Smith and Wellesley Colleges it may claim peership with the strongest of American colleges for either sex, in the ability of its professors, the quality of its material equipment, and the scholarship of its graduate and postgraduate students Among the honors achieved by the latter is the recent appointment of one of its fellows to the headship of Barnard College, a Department for Women in connection with Columbia College in New York

President Rhoads' labor and responsibility, with his unsparing devotion to every duty, were very exacting; and, after an illness which impaired his strength, he felt compelled to resign the Presidency of the college in 1894 He was retained as Professor of Ethics, which he had long taught, and as President of the Board of Trustees In the department of Ethics he was unquestionably a superior teacher Although, in his own conviction, the "ethics of Jesus" are sufficient for all human needs, his breadth of mind led him to do justice to all side lights upon his subject, from Confucius, Plato and Marcus Aurelius down to Martineau and Herbert Spencer. There was a warmth and radiance in his personality; the man being more always than his teaching or his preaching, so that it was said that no one could be an hour in his company without being the better for it.

In 1890, Union College, in the State of New York, awarded to him the well deserved honorary degree of LL D With an increased measure of rest, though still maintaining his interest in philanthropic work, especially in connection with the Indians, and being often engaged in the ministry of the gospel, he seemed, at the beginning of the year 1895, to be gaining in health On the second of January of this year, however, having walked from his residence to the railway station at Bryn Mawr, intending to go to the city to attend a lecture on a sociological subject, while seated awaiting the coming of the train, his head fell forward, and almost in a moment he expired.

His work was done. Although not a very aged man, it may be said, changing somewhat the words of a familiar line, that "his toil was as the toil of ten, because his heart was pure," not only pure, but animated by a noble devotion to God and to his fellow-men

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Obituary Notice of Henry Coppée, LL.D

By J. G. Rosengarten.

(Read before the American Philosophical Society, May 17, 1895)

Henry Coppée, LL D, was born in Savannah, Ga., October 13, 1891. He spent two years at Yale College, in the class of 1839, then studied engineering, and was employed in the construction of the Georgia Central

Railroad from 1837 to 1840 He entered the U S Military Academy at West Point and graduated in 1845

Gen Cullum in his extensive *Biographical Register of the Officers and Graduates of the U S Military Academy* (third edition 1891 Vol II p 232) gives other particulars of Prof Coppée's short but distinguished military career He graduated No 11 in a class of 123 In it were Gen William F (Baldy) Smith Gen Thomas J Wood Gen Charles P Stone Gen FitzJohn Porter Gen John P Hatch Gen John W Davidson Gen D B Sacket Gen Gordon Granger Gen H B Clitz Gen William H Wood Gen David A Russell Gen Thomas G Pitcher all distinguished in the Union Army in the War of the Rebellion and Gen Louis Hébert Gen Thomas G Rhett Gen James C Hawes Gen R C W Radford Gen Barnard E Bee of the Confederate Army Gen Cullum says that Coppée having been appointed Cadet July 1 1841 and graduating July 1 1845 became a Brevet Second Lieutenant Second Artillery July 1 1845 served at Fort Columbus N Y and became Second Lieutenant First Artillery June 18 1846 served in the war with Mexico was engaged at the siege of Vera Cruz March 9 29 1847 in the battle of Cerro Gordo April 17 18 skirmish of La Hoya June 20 of Ocalaca August 16 was promoted to First Lieutenant First Artillery August 20 engaged in the battle of Contreras August 19 20 the battle of Cherubusco August 20 was brevetted Captain August 20 for gallant and meritorious conduct in the battles of Contreras and Cherubusco was engaged in the storming of Chapultepec September 13 1847 and in the assault and capture of the City of Mexico September 13 14 1847 he was Assistant Professor of French at the Military Academy August 29 1848 to June 22 1849 and Principal Assistant Professor of Geography History and Ethics June 14 1850 to May 16 1855 and resigned from the Army June 30 1855 His literary work is very extensive From 1864 to 1866 he edited the *United States Service Magazine* He wrote *Elements of Logic* published in Philadelphia in 1857 *Gallery of Famous Poets* 1858 *Elements of Rhetoric* 1859 *Gallery of Distinguished Poetesses* 1860 *Select Academic Speaker* 1861 *Manual of Battalion Drill* 1862 *Evolutions of the Line* 1862 *Manual of Court Martial* 1863 *Songs of Praise in the Christian Centuries* 1864 *Life and Services of General U S Grant* 1866 *Manual of English Literature* 1872 *Lectures on English Literature considered as an interpreter of English History* 1872 he also edited a translation of Marmont's *Esprit des institutions militaires* and the American edition of the Comte de Paris *Civil War in America*

Prof Coppée's most important work is his *History of the Conquest of Spain by the Arab Moors with a Sketch of the Civilisation which they achieved and imparted to Europe* Published in Boston in 1881 dedicated to his infant grandson and namesake it is the result of studies begun when Coppée served as a soldier in Mexico in 1846–1848 and renewed by a brief visit to Spain in 1870, covering a period not touched by Washington Irving and not included in Prescott—although both are just within sight the former outlining it as work yet to be done—the latter taking up the story of Ferdinand and Isabella just at the close of the period covered by Coppée He drew his information from current histories from Arabian sources from contemporary records and from later Spanish authors thus giving to the public the results of earnest study of works little known to the general student

Dr Coppée was elected a member of the American Philosophical Society on January 14 1850 He contributed an Obituary of Washington Irving Vol vii p 303 a paper on Flax Culture Vol ix p 20 and an Obituary of Gen O G Mitchell Vol ix p 147 of the *Proceedings* of the Society The first of these was read September 21 1860 the last on February 20 1863 and the two are characteristic alike of Prof Coppée s love of literature and of the services of his fellow graduates of West Point especially of those who like Gen Mitchell and like Coppée himself had won honor in the field of arms and in peace

When in 1865 Judge Packer conceived the idea of founding Lehigh University and looked about to find some one who could undertake the carrying out of his noble plan Prof Coppée was elected as the most suitable and in November of that year the Presidency was offered to and accepted by him In the following spring he removed to Bethlehem and the arrangements were made for the opening of the new institution which was chartered in February and began its work in September Technical education was in its infancy and many of the original regulations have been modified from time to time as the advantage of such changes was demonstrated but after all these years the general wisdom of the first foundation has been justified by the fact that so much still remains unaltered and the name of the first President is written upon much that now exists

In 1875 President Coppée decided to resign the Presidency and confine himself to literary work which was so much more congenial to him than the executive duties of his office but consented to act as President until his successor could be elected Thrice since in 1879 in 1890 during the temporary absence of Dr Lamberton and from September 1893 until the time of his death he filled this office and administered the affairs of the university with faithfulness and zeal

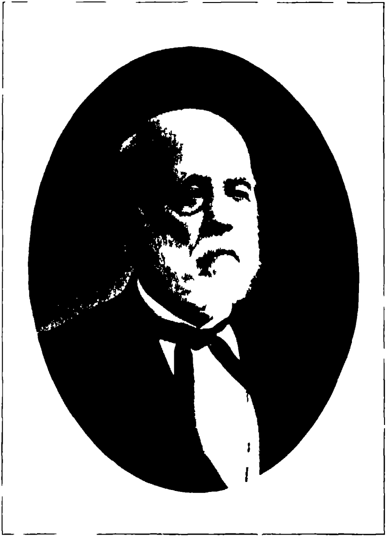
In his chair of English Literature he did much to arouse a love for the great models of literary art and made the study of Shakespeare a delight to large and enthusiastic audiences His fine taste and beautiful delivery enabled him to give an interpretation of the mighty dramatist which charmed all who heard him But his fondness for his work of teaching impelled him to unfold his favorite authors to select companies of pupils who appreciated to the full his instruction hours that will be doubly precious to the memory now that the beloved teacher is at rest

Dr Coppee was honored by Union College and by the University of Pennsylvania with the degree of Doctor of Laws and has had a number of public appointments which show in what high esteem he was held by all who knew him. During the war he was commissioned a colonel upon the staff of Governor Curtin, and was then chief of staff to Gen. Couch when on the way to Gettysburg.

Gen. Couch writes of him as follows: "Prof Coppée came to Harrisburg about the 20th of June, with other Pennsylvanians, prepared to organize for the defense of the State against the invasion of Lee. I was very glad to see the Professor, and at once sent him towards Altoona in order to keep me advised of affairs in that portion of my department. He was recalled to Harrisburg on the 24th of June and appointed by me Military Secretary with the rank of Lieutenant Colonel, of course I had no authority to issue commissions, but the exigencies of the hour demanded extreme measures. The Colonel's military education and field experience in Mexico admirably fitted him for the position. I now recollect back thirty two years, with the anxiety of those momentous days, with an army of new half-armed men and seemingly every burden placed upon my shoulders, that Col. Coppée, with patience and diligence, served the public cause with the earnestness and loyalty of a veteran of the army of the Potomac. On the 10th of July the Colonel accompanied me when Department Headquarters were established at Chambersburg, and continued on duty until the 15th of the same month, the day after Lee had withdrawn his army to Virginia. The exigencies which demanded the Colonel's services having ceased to exist, he returned to his home in Philadelphia."

He was a regent of the Smithsonian Institution for twenty-one years, Lecturer on International Law in Union University Law School, Albany, N. Y., 1875, 1876, and was very active in the councils of the Episcopal Church, of which he was an ardent member. As Senior Warden of the Church of the Nativity, South Bethlehem, delegate to the Diocesan and General Conventions, as member of the committee which prepared the Hymnal, and in many other capacities, he gave his best thought and service to the church of his love.

The space of this memoir will not permit one to really go over in outline the wide activities of this noble life, whose absence is now so keenly felt, and there are other relations of life, which show in a still higher degree his grand qualities, which ought not to be mentioned here, as being too sacred for public discussion. Those who have known of his high-mindedness in all things, his generous friendliness to all who claimed his sympathy and his assistance, are well aware that a splendid soul has gone from us to his well-earned reward. One thing ought not to be forgotten. When you travel through some dense and lofty forest you cannot help noticing how the trees on every side show a lack of symmetry, now gnarled and bent, now dwarfed and stunted. But when you gain the open glade and see some magnificent giant of the wood lifting its head high in the air with perfect proportion and luxuriant foliage, the contrast is very striking, and the beauty of the one is made all the more apparent from the imperfection of the other. And so it is with character.



W S W Ruschenberger

If we saw only the one sided and narrow type of man we should be liable to have a false idea of the nobility to which we can hope to attain and the pessimism which blights noble aspirations and checks the growth of true moral ideas would seem to be sound philosophy

True culture cannot lead us higher than this to a generous breadth of view and uprightness of soul to sturdy principle and a steadfast pursuit of the noblest aims to sympathy with our fellows and a ready helpful ness where our influence can direct can stimulate and elevate

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Obituary Notice of Dr William Samuel Waithman Ruschenberger

By Dr D G Brinton

(Read before the American Philosophical Society May 17 1895)

The obituary notice which I have to present of our late Vice President Dr William Samuel Waithman Ruschenberger will be brief not that materials are deficient to make it longer but that according to the opinion of those who stood nearest him in life it was his preference that it should be brief or even that none should be prepared It would not be proper for us however to permit so distinguished a member of this Society to pass from among us without at least some mention of his long and fruitful activity in the cause of science and progress

His parents Peter Ruschenberger and Ann Waithman resided at the date of his birth which was September 4 1807 on a farm near Bridgeton Cumberland county New Jersey The early education he received is stated to have been in New York and Philadelphia and when not yet twenty years of age on August 10 1826 he was appointed a surgeon s mate in the United States Navy the appointment being from the State of New Jersey He was immediately sent to the Pacific and after his return entered the medical department of the University of Pennsylvania, from which institution he received the diploma of Doctor of Medicine, March 24, 1830 The following year April 4 1831 he was commissioned as surgeon in the United States Navy and in a short time was again despatched on a long cruise in the Pacific and Indian Oceans

From 1836 to 1839 he was Fleet Surgeon and in that position visited Southern Arabia the Persian Gulf and various parts of the East Indies and China which at that time were rarely in the track of travelers About twenty years later from 1854 to 1837 he was again Fleet Surgeon of the Pacific squadron which was his last service at sea Between these dates he was officially employed at the Naval Hospital at New York city where among other valuable developments he organized the United States Naval Laboratory for supplying the service with pure pharmaceutical preparations and carrying on researches into medical questions.

After his return in 1837 he was appointed to special duty in Philadelphia and during the Civil War passed most of his years at the Navy Yard in Boston For a time he was President of the Examining Board for the admission and promotion of assistant surgeons of the Navy and after the close of the war had charge for a time of the Naval Hospital at Philadelphia

He was retired in 1869 with the rank of Commander and when the grade of medical director United States Navy was established in 1871 he was at once promoted to that position with the rank of Commodore on the retired list The last active duty which he performed was at the Naval Hospital Philadelphia from 1870 to 1873

At the time of his death which took place at Philadelphia March 24 1895 he had been sixty eight years and eight months in the Naval service of the United States forty three years of which had been in active service and twenty six years on the retired list

Such is a condensed statement of Dr Ruschenberger's official life Although ever earnestly devoted to its duties they by no means occupied his whole attention From early youth he had cherished a love for the natural sciences and a pleasure in literary composition The results of these remain in several volumes narrating his voyages and observations and many scientific papers The variety of these may be judged from the following chronological list which is by no means exhaustive

1833 A List of the Plants of Chili In Silliman's Journal

1834 Three Years in the Pacific 2 Vols

1835 The same work in London

1838 A Voyage around the World Republished in London the same year

1838 Meteorological Observations on a Voyage from Peru to the United States around Cape Horn In Silliman's Journal

1845 Hints on the Reorganization of the United States Navy (One of a number of pamphlets and articles written by him on this subject)

1846 Elements of Natural History (Short popular introductions to a number of the natural sciences appearing at various dates between 1846 and 1850)

1850 A Lexicon of Terms used in Natural History

1850 An edition of Mary Somerville's "Physical Geography Re edited in 1853

1852 A Notice of the Origin Progress and present Condition of the Academy of Natural Sciences Philadelphia Second edition in 1860

1854 Notes and Commentaries during Voyages to Brazil and China

1856 On the Mercury of New Almaden California In American Journal of Pharmacy

1867 Statistics of Human Growth

1873 On the Value of Original Scientific Research

1873 On the Origin and Properties of Cundurango

1887. An Account of the Institution and Progress of the College of Physicians of Philadelphia during 100 years (308 pages.)

This list, however incomplete, is sufficient to reveal Dr Ruschenberger's profound sympathy with the progress and the popularization of scientific knowledge in many fields. He was also during the whole of his life an active participant in associations for the collection and dissemination of knowledge, and for the organization of scientific work and workers. The following list of those to which he belonged is probably only partial. I add the dates of his election to them, when known to me

The Medical Society of Philadelphia, March 24, 1831
The Academy of Natural Sciences, Philadelphia, May 29, 1832.
The United States Naval Lyceum, New York, February 1, 1836.
The College of Physicians of Philadelphia, March 10, 1839.
College of Physicians and Surgeons, New York, February 22, 1845.
American Institute, New York, June 13, 1843
Pennsylvania Horticultural Society, March 16, 1896
Pennsylvania Zoölogical Society, October 13, 1887
Philadelphia College of Pharmacy (Honorary), March 27, 1893
The Historical Society of Pennsylvania.
The Franklin Institute.

He was also a member of the Military Order of the Loyal Legion of the United States, to which he was elected October 20, 1883.

Of several of these associations he was a conspicuously energetic member and held in them high official positions. From 1869 to 1881 he was President of the Academy of Natural Sciences, and occupied the same office in the College of Physicians from 1860 to 1883 Up to the end of his life he continued his interest and his activity in these two societies, the details of which I need not enter upon, as they will doubtless be given in the pages of their proceedings

The records of the American Philosophical Society show that he was elected to its membership on October 19, 1849, and to its Vice-Presidency, January 2, 1885, a position to which he was annually reelected until his death.

So far as I have ascertained, he did not publish in its *Transactions* or *Proceedings* any papers of a scientific character; but he was faithful in preparing and reading a number of obituary notices which had been assigned him. The following is a list of such:

Dr. Robert Bridges, *Proc.*, xxi.
Dr. Robert E. Rogers, *Proc*, xxiii.
Dr. Gouverneur Emerson, *Proc.*, xxix.
Dr. Joseph Leidy, *Proc*, xxx.
Mr. William B. Rogers, *Proc.*, xxxi.
Dr. William V. Keating, *Proc.*, xxxiii.

He was regular in his attendance at the meetings of the Society up to a recent period, when his increasing infirmities rendered it imprudent for him to expose himself to the night air.

On October 28, 1839, Dr Ruschenberger married Miss Mary Baynton Wister, daughter of Mr. Charles J Wister, of Germantown. They celebrated their "golden wedding" in 1889, and she survived some years afterwards, but died before her husband Their only surviving child is Lieut C W. Ruschenberger, U. S Navy

In his religious convictions the Doctor inclined towards the principles of the Society of Friends He occasionally spoke of himself as a "Quaker," but certainly did not adopt their views on passivity and nonresistance While a believer in the value of religion in the individual and social life, he did not attach himself to any particular denomination

A few words in closing on the personal traits of our late Vice-President. Throughout his life he was governed by a high, I may say, a severe sense of duty He never spared himself in carrying out to the uttermost what he thought was right for himself to do, and he expected those under him and about him to observe a similar inflexible and unswerving attitude towards their obligations. This sometimes imparted to his actions and expressions an air of harshness, which they did not contain, if rightly understood. On the contrary, his nature was really kind and sympathetic; in conversation he was affable; to earnest and honest students he was ever obliging and helpful, and I have often noticed that he never forgot a friendly service towards himself, or towards any of the institutions which he presided over with such unselfish interest.

As an officer of the Navy, he was always held in high esteem by the Department, both professionally and personally, as was manifested on many occasions.

Though frequently before the public in his writings and in the various positions which he occupied, he was a man of unusual modesty in demeanor, he did not seek fame of any kind, and quite thoroughly disliked the ephemeral notoriety which so many strive for. In him we have lost a staunch and valued officer, and the American world of science one of its most venerable and respected pioneers.

In Memory of Edward Yorke Macauley, U. S N

By Persifor Fraser.

(Read before the American Philosophical Society, September 6, 1895.)

Edward Yorke Macauley,* Rear Admiral U S. N., was born in Philadelphia, Pa, November 9, 1827.

His parents were Daniel Smith McCauley, formerly Lieutenant

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*In his later life he adopted this manner of spelling his family name. The name of his relatives and his own name during the greater part of his life was written McCauley, though his uncle and more remote ancestors spelled it in the manner finally adopted.

E. Y. McCauley

REAR ADMIRAL U. S. N.

U S N and Sarah Yorke who had besides this son an elder daughter Louisa and a younger Mary

The birth of this latter daughter must have occurred shortly after that of Edward and either accompanied or was closely followed by the death of his mother for his father was remarried on October 31 1831 by the Rev James Montgomery to his second wife Frances Ann Jones daughter of Hugh Jones of North Carolina They sailed for Tripoli the following day November 1 1831 (letter of D S Macauley in possession of Capt C N B M)

Edward s great uncle Rear Admiral Charles Stewart U S N had a career in many respects unparalleled in the U S Navy which can be but briefly alluded to here Born in Philadelphia February 8 1778 of Irish parents he entered the merchant marine as cabin boy in 1791 and very soon commanded an Indiaman He entered the Navy as Lieutenant March 9 1798 served with the greatest distinction in the war with France in that with the Barbary States and in that with England in 1812 and received like the *Constitution* which he long commanded the name of Old Ironsides He closed an active and honorable career of seventy one years in the service of the United States on November 6 1869 During this time he was on active duty for sixty four years and for seventeen years ranking officer of the Navy

Edward s uncle Commodore Charles Stewart McCauley (a nephew of Charles Stewart) was born in Philadelphia February 3 1793 He was appointed a midshipman U S N in 1809 and rose to the rank of Lieutenant in 1814 He served with distinction on the *Constellation* in 1813 and on the *Jefferson* on Lake Ontario in 1814 At the breaking out of the Rebellion of 1861 he was ordered to the Gosport navy yard and prevented a large amount of material from falling into the hands of the rebels He died on May 21 1869

The brother of Charles Stewart McCauley and father of the subject of this sketch was Daniel Smith McCauley who entered the United States Navy as midshipman in 1814 and rose to the rank of Lieutenant which commission he resigned in 1825 The dates of his birth (which was probably in the nineties of the eighteenth century) and of his marriage to Sarah Yorke (which is likely to have occurred about the time of his resignation from the Navy) have not been discovered

It is probable that Sarah Yorke McCauley died about 1829

Owing to some reverse of fortune which was rendered more severe by the fact that his associates in the unfortunate enterprise did not like Daniel Smith McCauley pay their losses loyally and to the sacrifice of their capital his circumstances were straitened and he applied for and received the appointment as U S Consul at Tripoli July 29 1831

There is some uncertainty as to the movements of the Consul s family at this time His youngest daughter Mrs Mary G Moore a sister of the late Admiral now living in England informs the writer that she and her sister Louisa had been sent out in a sailing vessel in charge of the captain s wife by their grandmother Mrs Yorke to meet their father in Marseilles They all traveled to Tripoli together proceeding from Malta in an American man of war Edward was with them and the sailors made him a present of a heavy leaden cast of an Indian warrior painted in colors It was for years a favorite toy of all the children During his fifth or sixth year he was in the care of his family at Tripoli where his early education in languages was commenced by tutors that in mathematics algebra (*sic*) and navigation by his father later At the early age of seven he was riding races with his sister Louisa to the great admiration and astonishment of the Moors (Letter of D S M January 1836) In 1837 or when Edward was ten years old his father considered him sufficiently advanced to navigate his yacht to Malta as will be seen further on By experience of this kind the future Rear Admiral gradually learned practical navigation and evidently improved in linguistics thus laying the foundation of the philological and archeological studies which were kept up till his death

In a letter from D S McCauley dated 1832 he describes an attack on the bashaw s capital by the latter s brother in which during the bombardment the U S consulate was several times struck by missiles Edward then a child of but five years showed no fear but was always among the first of those who sallied out to investigate the extent of the damage Another incident of his childhood is thus related by his sister My father was down on a sandy beach outside of the town (Tripoli) one day superintending the building of his yacht My brother (Edward) a child of six was with him playing about among the timber etc It happened to be a day which was kept every year as a Mussulman religious fanatic feast The custom was for the Marabouts to race about the streets in a sort of religious frenzy shouting devouring serpents and cutting themselves with knives Their violence was chiefly shown against the Christians and Jews who dared not leave their houses or even open a window on such occasions The stories of their atrocities were most appalling My father who did not believe in their madness always went out as usual on this feast merely arming himself with a stout stick On this occasion hearing the shouting and tearing along of the crowd he looked up just in time to see a Marabout seize the child and fling him over his shoulder My father picked up a large pickaxe which lay close by and made a movement to throw it at the Marabout when the latter dropped the child very suddenly in a very sane manner Owing to very forcible representations to the Pasha of Tripoli the mummery was entirely done away with after that year My father did not believe in the madness of the fanatics

His early association with Arabs Greeks Turks and Levantines and his consequent familiarity with the distinctive features of Oriental life at a time when the dwellers on the shores of the Mediterranean were less contaminated by intercourse with the travelers of all nations than now had great influence on the imagination of a boy who was naturally receptive, and who was gifted with an unusual power of imitation The graceful use of the limbs in gesticulation, the peculiar and difficult art of intoning and pronouncing languages after the manner of those who were born to their use, must have been learned by him at this time. This aptitude he retained to the last day of his life It lent a greatly increased spirit and interest to the most commonplace recitals If he desired to express the act of putting a coin or a heavy object on a table, his motions and gestures were as natural as those of the best of prestidigitateurs You could almost see the coin—you could almost swear that he was straining his muscles in lifting a heavy object, though these were entirely invisible to you. These gifts which the writer observed at a much later day are mentioned because such perfect art can be acquired only by one of high receptive capacity from good models and very early in life, and the period of his career we are now considering was probably that at which his very remarkable naturalness and grace of movement were learned and became habits

He has often spoken of the charm he felt at this period in gazing at the beautiful but capricious blue inland sea; of his awe in contemplating the desert, and the ruins of ancient civilizations, and of his wonder at the deep rooted hatred of the Arabs for the "Christian dogs!"

He mastered the language of the country in several of its dialects and never forgot it His recollections as a child of the blistering heat, the suffocating sirocco forcing the impalpable sand of the desert into the very pores of the skin, the darkened rooms, the unassuageable thirst, show that although this was the first climate and land he had really known, having left America when but an infant, his constitution was not adapted to support its rigors as were those of the dwellers in the Levant.

He related to the writer a rash attempt to ride in the desert but a single mile while one of the scorching south winds was blowing, which nearly cost him his life.

At the time of the plague in Barbary, in 1837, the Consul and his family moved to Malta, and Mrs. McCauley, with Edward and his stepsister, Rebecca, started for the United States, but while waiting for a fair wind, her heart failed her and she returned to Malta. Mrs Moore thinks Edward was sent to Malta and put at the school of a Mr. Howard; and when the plague reached Malta he was removed to the house of Consul General Sprague (or Sharples?) in Spain (?) It is a tradition also that his attendance at school in Malta was about two years before his appointment as midshipman in the U S Navy (which would be 1839). At the time of the return of his wife the Consul planned a cruise on his yacht to Sicily, leaving Louisa and Mary at school, but taking Edward, who showed a strong disposition to be a sailor, "which I do not oppose, as I see no chance of educating him for a better profession" (D. S. M., letter May 9, 1837).

They spent two or three months cruising, and returned to Malta in August, 1837, where they found the cholera raging.

On account of the health of one of his children, the Consul and his family left Tripoli in November, 1838. In a letter from him dated January 29, 1840, he reports having addressed a letter to the President, soliciting an appointment in the Navy, but without much hope of success.

Under this same date, he adds: "Edward writes and speaks fluently the French and Italian, and speaks with equal fluency the Arabic and Turkish, and writes a little of the latter, at which he continues to study." He mentions also Edward's fondness for the sea, and the fact that he has navigated the schooner yacht to Malta and back

In subsequent letters the Consul asks the assistance of "Uncle Stewart" (Admiral Charles Stewart) and the Consul's brother (afterwards Com. Charles S McCauley), in securing the appointment from the Secretary of the Navy. Mr. Paulding, Secretary of the Navy, has assured him his application will secure respectful consideration when a vacancy occurs.

The wife and three of the children of D S McCauley returned to the United States, but Mary and Edward remained behind, the latter because the Consul's mother had advised him that Edward will be appointed to one of the first vacancies in the corps of midshipmen.

Edward remained in Tripoli, studying to fit himself for the Navy. The family was in great suspense at the delay in receiving the warrant, which, however, finally arrived, having been dated September 9, 1841 (letter from D. S. McCauley, dated November 16, 1841)

It does not appear, however, that he was assigned to duty until 1842, during which year his father received permission from the captain of H. M. line-of-battle ship, *Malabar*, to put Edward aboard this British war ship for the voyage to Gibraltar, with the understanding that he was to be transferred to any U S man of-war which should chance to meet the *Malabar*, en route.

It happened that the *Malabar* fell in with U S. sloop of war, *Fairfield*, Capt. William F. Lynch commanding, and the young midshipman was sent aboard her with his luggage and his letter of appointment. Capt. Corbin, U. S. N, was at that time senior midshipman on the *Fairfield*, and was instructed by the commanding officer to take the new comer over the ship and show him the ropes, while the officer commanding the *Malabar's* cutter, which brought the embryo midshipman aboard, was entertained by Capt. Lynch.

Young Corbin took the new arrival for an Englishman from his accent and carriage, and was very much astonished when the boat pulled back to the *Malabar*, leaving McCauley aboard This was the latter's first experience of naval life. He served on board the *Fairfield* until 1844

A few months after his appointment as midshipman he was attacked by typhus fever, through which malady his father nursed him unassisted night and day to recovery: after which the whole family made a trip to Tajoura (opposite Aden on the African side of the straits of Bab. el Mandel) for rest and recuperation. They spent a month there, Edward navigating the boat in which some of them cruised all day on the laké, while his father was often watching with great anxiety for their return, as the lake was dangerous and liable to sudden squalls. Shortly afterwards the

Consul took his son to Malta where the latter joined the *Fairfield* as has been stated

Edward entered the Naval School then first established at Annapolis, November 12, 1845, and studied for a year, but upon the declaration of war against Mexico he was among the midshipmen who volunteered for service in that war

To his great disappointment however, after being promised orders to the "first ship going to the seat of war," he was ordered to the African coast, where he spent two years, returning to the Naval Academy February 2, 1848 Mrs Moore has in her possession a MS diary with many illustrations which he kept during this cruise In July of that year he left the school and after a short period of "waiting orders" began the real responsibility of a professional career on the frigate *Constitution*, which was ordered to the Mediterranean While there his father Daniel Smith McCauley still Consul at Tripoli was transferred to Alexandria, Egypt as U S Consul General by orders from the U S Department of State dated August 14 1848, the frigate *Constitution* conveying him and his family with their effects to his new post On the day of the arrival of the frigate at Alexandria a boy was born to the Consul General, who esteeming it a happy omen that a son of his should first see the light on a vessel so identified with the naval history of his family named the child "Constitution Stewart McCauley"

Edward was warranted a passed midshipman to date from August 10, 1847 on September 29 1849

The transcript of his orders obtained from the Navy Department and inserted in another place will indicate the charges given to him succesively It is only possible to touch upon those which were of most importance

Passed midshipman McCauley was ordered to the *Powhatan* Commodore Perry s flag ship which sailed from Norfolk, November 24, 1852, on the expedition to Japan

The results of this expedition are sufficiently familiar to all Americans to render unnecessary any allusion to them in this place McCauley was twenty five years old and this was his first expedition out of the ordinary routine He had been familiar with the beauty and opulence of the seaports of that enchanting region where Asia, Africa and Europe unite, he was versed in the etiquette of the most civilized nations on that delicate field of diplomacy where a blunder serves as a pretext and often involves the most serious consequences, he was acquainted with the civilization of the Arab and the Persian, and their smiling aversion to the Caucasian, their aims and their creeds had been McCauley's study But he was now, in the train of one of the New World s most distinguished war chiefs, to enter another and heretofore almost entirely unknown world whose religion, philosophy, manners and resources were as dimly understood by the remainder of the world as if they pertained to the inhabitants of another planet To such a character as that of the young midshipman this novelty was an inspiration, and the prospective journey an anticipated delight. He took with him a rare and beautifully bound album, the leaves of which were of various hues, and commenced at once to illustrate this remarkable voyage If one looks through the illustrations accompanying the official account of this expedition it will be seen how faithful and admirable, and at the same time superior to these were the pictures and descriptions in this private illustrated journal *

McCauley's sketches, full of life and humor (exhibiting at the same time lack of training in the technical details of drawing and coloring, yet an abundance of artistic sense in the treatment of his subjects), speak to the observer of a happy, talented youth, free from care and confident of the future He was then twenty-four years of age.†

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* The title of this official quarto of 537 pp together with the contents of several of its important chapters here follows

NARRATIVE
OF
THE EXPEDITION OF AN AMERICAN SQUADRON
TO
THE CHINA SEAS AND JAPAN
PERFORMED IN THE YEARS 1852, 1853 AND 1854,
UNDER THE COMMAND OF COMMODORE M C. PERRY, UNITED STATES NAVY,
BY ORDER OF THE GOVERNMENT OF THE UNITED STATES,
COMPILED FROM THE ORIGINAL NOTES OF COMMODORE PERRY AND HIS OFFICERS, AT HIS REQUEST, AND UNDER HIS SUPERVISION,
BY FRANCIS L. HAWKS, D D, LL.D,
WITH NUMEROUS ILLUSTRATIONS.
PUBLISHED BY ORDER OF THE CONGRESS OF THE UNITED STATES.
WASHINGTON
BEVERLY TUCKER, SENATE PRINTER,
1856.

CHAP II From Capes of Chesapeake to Madeira, view of island—Funchal * * St. Helena, Jamestown. Hospitality of a native to a Lieutenant.
CHAP III Passage to "the Cape."
CHAP IV. Mauritius, Port Louis, * * Point de Galle (Ceylon), * * Straits of Malacca, Singapore.
CHAP V Singapore, * * Hong Kong, * * Macao, * * Whampoa, * * .
CHAP VI. Macao, * * Shanghai, * * Napha, * *
CHAP VII. Lew Chew * * Visit to palace of Shui, * * .
CHAP. VIII. Exploration of Lew Chew. * * The Commodore visits regent at his palace, and invites the authorities on board the *Susquehanna* to dinner.
CHAP. X. Bonin Islands.
CHAP. XI. Lew Chew (same picture, p. 169, Chap. VIII, and 226, Chap. XI).
CHAP. XII. Departure from Napha for Japan, Yedo, etc.
CHAP. XIII Reply from court at Yedo, etc

† The following comprise the principal subjects of these colored drawings, i. e.,
Band itti (ship's negro minstrels), "Members of the *Boarding* School" (sailors with pistols, muskets, pikes and cutlasses), "The Reason Why Johnnie Came to Sea,"

The humorous sketches aboard ship are excellent, and the carefully elaborated drawings of the canoes of State, the weapons, buildings and costumes of the inhabitants of Lew Chew and the coast of China are the best things of their kind the writer has seen, and far more graphic and instructive than the illustrations accompanying the before mentioned official account. Of a sudden these delightful sketches cease with an entry of June 9, 1854 (?), though the album is but half full. The reason is to be found in the official volume before alluded to. Strict orders were issued by Commodore Perry that no sketch or narrative should by his officers be communicated to their own families, or to the public,* and while an officer probably had the right to make and retain such data among his private papers, yet the penalty which he would pay for any accidental or unguarded communication of his sketches or notes, and the barrenness of the pleasure of keeping them entirely to himself, in all probability discouraged McCauley from continuing his project. The reporting of the expedition was to be "official," and by the chance employment of the then little known traveler Bayard Taylor as historian, classic. This long expedition was crowned with success and made the participants in it marked and envied men for many years Among those mentioned in Commodore Perry's despatches as deserving of credit for the intelligent performance of duty was the subject of this sketch.†

"Chalks, the Ship's Cook," "Unmarried and Married," "Going and Returning on Twenty four Hours' Leave," "Municipal Police of Mauritius Reception House at Bumé Borneo," "Manmaigne Rajah," "Chinese Fast Boat," ' Hong Kong," "San Pan," "Dream of Johnnie," "Japanese Salute," "Jack's Provocashins, ' "The Barrel Overcoat," "After a Six Months Leave," "Gun Practice," "Cousin Nelly," "Return Stock," "A Japanese," "One of the Things not Thought of when Homeward Bound " Sketches of Loo Choo (*sic*) man, woman, knife, Joss, Japanese head, Japanese pipe, Mandarin hat partly finished, and colored croquis of a home scene, "Mount Fusi," "Mount Chesima in Eruption," "Plan of Jeddo Bay," "Japanese," "Japanese Utensils and Arms," "Mandarin Boat No 4," "Japanese Nob and Snob," "Japanese Scull," "Japanese House on Sail Boat," Coins, fire engine, hat, paper mackintosh and wooden pattens, Prince's barges, Japanese soldier, straw mackintosh, Japanese wrestler, Japanese landscape, Japanese woman on pattens, Japanese buildings, bow and arrow, U S officers with Japanese lantern, map of Hakodada bay, etc

* "All journals and private notes kept by members of the expedition were to be considered as belonging to the Government until permission should be given from the Navy Department to publish them" (*Narrative*, etc , p 100).

† "The Secretary of the Navy in his report speaks thus of the conduct of our officers and men of the East India squadron with the pirates in the waters of the China seas

"'In the several encounters the officers and men have conducted themselves gallantly,' and honorable mention is made of Lieuts Pegram, Preble, Rolando, E Y. McCauley and Sproston, Asst Engineers Stamm and Kellogg, Acting Masters Mates J P Williams and S R Craig, and private Benjamin Adamson, of the marine corps, who was dangerously wounded.

"Lieuts Henry Rolando and J G Sproston are from Baltimore, and Lieut. McCauley is from this city, though his father was for some time Consul General from the United States to Egypt" (Philadelphia daily paper of (?) 1856).

(This reference is to the attack of the *Powhatan* on the Chinese pirates in the China seas in 1855)

It is proper to notice here that this experience of a new phase of Oriental life, added to the training of McCauley's youth in Egypt, naturally produced a marked effect upon the direction of his thought, and gave his studies an Oriental and philological bias. Naturally a shrewd observer and a good imitator, he improved every occasion to increase his repertory of languages and his mastery of Oriental habits of thought. But despite this undercurrent, scarce observed by himself, perhaps, but which was to become later his ruling tendency, he was now a handsome, well cultivated young officer, with a high appreciation of ladies' society, and everywhere welcome to it. The long story of his transfers, assignments to shore duty, waiting orders, sailing orders, etc., are about the same as those of thousands of other young men, and conceal in their laconic and routine phraseology about the same number of heart-burnings, bad and good luck, and apparent injustice.

The next important duty to which he was assigned was also for him, as well as for the country, epoch making, but of a very different kind from the last.

Mr Cyrus W. Field, at the head of a devoted few enthusiasts, had finally succeeded in impressing the governments of Great Britain and the United States with the feasibility of an Atlantic submarine telegraph, and both governments had granted the request for aid in realizing the project

The history of the vicissitudes, failures and final success of this enterprise deserves to be taught in the public schools, as an example of what courage and perseverance in the face of almost insurmountable obstacles may accomplish. The parts played in this drama, so important for the entire globe, by the *Niagara*, the *Agamemnon*, the *Gorgon* and the *Valorous*, is best told in a little book called *The Story of the Telegraph*, of which the title and the contents of some of the principal chapters will be found in the footnote below [*]

Additional interest in this connection is found in a small 8vo of eighty pages, entitled, *Proceedings at the Banquet held in Honor of Cyrus W. Field, Esq.*, of New York, in Willis' Rooms, London, on Wednesday, 1st of July, 1868 Revised by the Speakers. London: Metchim & Son, Printers, 20 Parliament Street S. W., and 32 Clements Lane E. C., 1868," in which occur the names of over four hundred of the most distinguished diplomats, noblemen, men of science and of affairs, barristers and representatives of the army and navy of England and France, presided over by the Duke of Argyle, R. T. The proceedings show the realization by the participants of the immense importance of the success of the Atlantic cable, and bear testimony in a very remarkable manner to the cordiality of Englishmen of the better class towards the United States, and in a more remarkable degree still to the spirit of fairness and justice which we are too apt to deny to our transatlantic cousins.* The incident is mentioned merely to call attention to these significant words used by the Chairman, the Duke of Argyle, in giving the toast, "The Military and Naval Service of the Two Countries, Great Britain and America" (*sic*).

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[*] *The Story of the Telegraph.* The Story of the Telegraph and a History of the Great Atlantic Cables. A Complete Record of the Inception, Progress and Final Success of that Undertaking. A General History of Land and Oceanic Telegraphs. Descriptions of Telegraphic Apparatus and Biographical Sketches of the Principal Persons Connected with the Great Work. By Charles F. Briggs and Augustus Maverick. Abundantly and Beautifully Illustrated. New York: Rudd & Carleton, 310 Broadway, MDCCCLVIII. 8vo, 255 pp. Chap. iii, "Origin of the Atlantic Telegraph," Chap iv, "Construction and Experiments;" Chap. v, "The First Expedition—Summer of 1857;" Chap. vi, "The Expedition of 1858;" Chap. vii, "The Third and Successful Attempt, Trinity Bay, Thursday, etc., August 5, 1858." "The *Niagara* and *Gorgon* arrived at Trinity Bay, yesterday. Atlantic cable perfect in working landed. The *Agamemnon* and *Valorous* spliced in mid-ocean with *Niagara*, and each proceeded her way, the first two for Valentia and the last to Trinity"

If variety in his experiences makes a highly cultivated man, certainly there is no need to look far for the cause of this characteristic in the late Rear Admiral Macauley. With a youth spent at the foot of the pyramids, and a young manhood passed in opening to the world the most advanced if hitherto unknown Oriental culture, he was now to experience what the acme of Western civilization could accomplish in "annihilating time and space."

From the contemplation of the mysterious shrines which even yet lock up from our ken volumes of the contemplative wisdom of the far past, he was to witness the instantaneous exchange of thought between men on board of a ship rolling in the seas of the wide Atlantic and men in a little station on the coast of Ireland; between the respective officers of two vessels on the ocean which were a thousand miles apart and constantly increasing that distance. Western objective science and triumph over matter was, in short, to build a superstructure to Eastern subjective speculation and mastery of mind.

What may have been the sensations through which this observant young officer passed we can only imagine, but it is most probable that the admiration for true science, which was noticeable in him, dates from this time. Yet by one of those singular turns, which it is impossible to account for, the science which from this time began to interest Macauley was not physics, as one would naturally suppose, but geology.

If there be a class of men who are debarred by their profession from progress in this science, it would seem to be the seafaring class, for, although sailors visit various parts of the world where instructive geological phenomena are to be observed, they can seldom absent themselves from the vessels sufficiently long to visit these localities, while the harbors and seaports in which they might find time to observe are usually stamped

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*"My lords and gentlemen, I hope the American people will believe, and I think they do believe that all Englishmen almost deplore the causes which ever led the two countries into collision They deplore them the more as I think the conviction is now fastened on the minds of all of us that *in these contests from beginning to end, England was in the wrong.* (Cheers.) *She was wrong in the quarrels with the colonists, and was hardly ever in the right in regard to belligerent warfare,*" etc. The last allusion is to the conduct of England toward the U. S. during the late war of secession. (P. F.)

indelibly with the modern seal of the earth's waters. Having performed his duties to the satisfaction of his superior officer, and having received their official commendation for his part in the final success of the Atlantic cable, which was successfully landed at Trinity Bay, August 5, 1858, Macauley received orders detaching him, with three months' leave, August 19, 1858.

These three months of leave passed all too soon if one considers that on January 28, of the same year, he had been married to one of the most beautiful women who ever graced the ballrooms of Philadelphia, Miss Josephine McIlvaine Berkeley (daughter of Dr Carter Nelson Berkeley, of "Edgewood," Hanover county, Va , and Ellen Reed McIlvaine, who was the daughter of Joseph Reed McIlvaine, of Burlington, N. J)

There is a pathos in the mere record of the date of this marriage on January 28, alongside of that of the orders of the Navy Department to join the *Niagara*, February 1, of the same year.

The last cruise had used him up, and he was much worried at the condition of his health. Through the influence of the Hon. Henry M. Rice, Senator from Minnesota, a year's sick leave was granted him. He went with his bride to St Paul, where they lived in Mr. Rice's house on Summit avenue.

Within a few months this leave was cut short on September 20, 1858, by orders to the naval observatory at Washington, which were followed by waiting orders on the following Washington's birthday (February 22, 1859), and on August 1, 1859, to the *Supply*. These last orders were too much for the young husband. He resigned from the service , his resignation being accepted August 19, 1859.

After considering various plans for the future, Macauley went into business in St. Paul, Minn., where the first call to arms to suppress the rebellion aroused him.

He immediately tendered his services to the Government on the outbreak of the Civil War, yet in the official record by the Navy Department of Admiral Macauley's services the first entry after the date of his accepted resignation is "Commissioned Lt. Comd'r., April 18, 1863 "

It transpires from the writer's correspondence with the Navy Department that Macauley received orders from the Department to report to Capt. DuPont for duty on May 11, 1861, and by the latter was ordered to the U. S steamer *Flag*, which was engaged in blockade duty on the coasts of Florida. He remained with her during parts of 1861 and 1862, and commanded the U. S. steamer *Fort Henry*, of the East Gulf Squadron, in parts of 1862 and 1863.

On April 18, 1863, he was ordered to the command of the *Tioga*, and while serving in her took part in the boat attack on Bayport, Fla.

His services on these small vessels, where he was exposed to the scourge of yellow fever, in addition to the ordinary vicissitudes of naval warfare, were most valuable, but as in the cases of so many others of the Navy these services were either never recorded, or the record has never been published Yet had it not been for the vigilance the self sacrifice and courage of the commanders of these small vessels the more brilliant exploits of the larger ones would have been in vain

On September 14 1864 he received orders to the Mississippi Squadron then temporarily under the command of Capt Pennock after the transfer of Admiral Porter to the Atlantic coast and before the arrival of Admiral Lee to replace him and was assigned by the acting Admiral to the command of the Fifth Division of the Mississippi Squadron embracing that river from Grand Gulf to a short distance below Natchez The writer followed the then Lieutenant Commander to Mound City Ill from Philadelphia and later accompanied him thence to Natchez serving under his command to the end of the war

This territory had been conquered by the brilliant victories of the Ellets Admirals Farragut Foote and Porter and of the army but it was filled with wealthy and influential rebels who were especially numerous in all the large towns and it was subjected to continual raids from flying rebel squadrons of all arms which held up the passing transports raided the military posts and even inflicted considerable damage on the light armored gunboats when in the course of their patrol duty the latter approached too near the site of a masked battery In view of the great importance to the U S Government of the maintenance of this river as a means of transporting material and reinforcements to the trans Appalachian armies and the Mississippi and Gulf Squadrons a great deal of responsibility rested upon the Navy officers and the difficulty of their task was much increased by the plots of those citizens who were claiming and receiving their protection In order to understand the situation it must be borne in mind that at this date 1864–1865 the people of the North and for that matter the sensible people everywhere North and South were convinced that the triumph of the lawful Government of the United States was merely a question of time The loyal adherents of the Government had grown so accustomed to the receipt of cheering news from the seat of war every time they sat down to breakfast that a serious defeat would have produced more discouragement then than in the early years of the great war before either public or combatants had been educated to the point of knowing just what could be expected of a great Army and Navy judiciously handled It was a necessary policy therefore to hold on to every inch of ground which had been gained and to risk less and less for further acquisitions as the extent of acquired territory increased

Strenuous and in part honest efforts had been made and were continually being repeated to end the war by negotiations with rebel commissioners The price of gold was fabulously high though destined to go much higher foreign nations were impatient of maintaining their attitudes of neutrality while submitting to the inconvenience of the loss of their American markets and the scarcity of cotton and just this demand for cotton made the course of an officer of the U S Navy in command of a part of a river which was the natural outlet of this commodity, very difficult and delicate.

"Influence" was occasionally crushing those who carried out their official instructions too zealously, for "influence" was invoked by wealthy cotton brokers, both abroad and in the Northern States A vast quantity of cotton worth from $400 to $800 a bale, was known to be stored on the plantations watered by the tributaries of the Mississippi. As the most important of the material resources of the enemy, it was invariably stored where its transportation by United States troops would be most difficult, and where it could be most easily destroyed when its defense was impossible. Hence the general orders of the United States forces were to burn it wherever found

There was always a pretext for suspicion of collusion with the U S. officer in command of the district when cotton was raided and successfully carried from a rebel plantation to a Northern market. The unfortunate officer was often placed in the most embarrassing position. As subsequently appeared, agents, especially of the fair sex, were regularly employed by the financial schemers to negotiate with the rebel cotton owners, and to hoodwink the Navy officers with the object of getting into commercial circulation as much cotton as possible to the advantage of all parties concerned, except the Navy man whom of course the actors in these transactions sought to inculpate when they were baffled in their undertakings.

The "influence" which they could bring to bear, added to their unquestioned charms of manner, made the lady solicitors very redoubtable. In fact they succeeded in injuring many reputations, and without doubt set free a large amount of cotton Any officer of whom it can be said as it can of the late Admiral Macauley that these difficulties were met and mastered by him, can justly claim to be an incorruptible man and a skillful diplomat. This was the real crux for the commander of a division fleet. Compared with this the more legitimate occupations of patrolling the river, blockading the bayous, and preventing the passage of information or material across the Mississippi within his jurisdiction (which Macauley and the other commanders so successfully accomplished that Jefferson Davis and his cabinet officers finally gave up the hope of being able to cross into Texas), were but technical naval details offering no serious difficulties.

On August 2, 1865, the war of the Rebellion having been ended by the triumph of the national arms, the then Lieut. Commander was detached from the Mississippi Squadron and placed on waiting orders. Thenceforward his connection with the naval service, though useful, as that of so experienced an officer must needs have been, shares the interest of his friends with his Oriental studies, which were pursued in the desultory manner necessary for an officer still on the active list. He was made Commander in 1866; Fleet Captain and Chief of Staff North Atlantic Squadron, 1867; Captain, 1872, Commodore, 1881, and Rear Admiral, 1885 One incident should be mentioned in connection with his command of the Pacific Station in this year the last he held His devoted wife with whom he had looked forward to passing the remainder of his days after the termination of this cruise in tranquillity and peace died suddenly while returning from a visit to her son then as now a medical officer of the U S Army stationed in the far West The telegram from the Department giving the Admiral leave to return home spared him the shock of the bald announcement of his loss but owing to the inefficiency of the telegraph service between Panama and Philadelphia he did not learn the nature of the disaster which had befallen him until he arrived at the house of a relative in Philadelphia and inquired for his wife who had long before been borne to the grave He applied to be retired and the request was granted

In spite of a blow which might well have been sufficient to prostrate a weaker man the Admiral at once commenced the construction of an ideal home for his two daughters and his youngest son While the public gaze may not follow him within its privacy it is not inconsistent with the extreme delicacy and respect which the writer feels for this home to say that it presented a rare example of mutual trust and interest of cheerfulness and affection

In 1881 he was elected to membership in this Society and signalized his accession by a paper in its *Proceedings* (xx 1) entitled Manual of Egyptology

On October 20 1882 he completed and presented for the *Transactions* the beautiful MS of his dictionary of Egyptian hieroglyphics which was afterwards published in Vol xvi New Series of the *Transactions* of this Society *

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* The title page and preface here follow

TRANSACTIONS

OF THE

AMERICAN PHILOSOPHICAL SOCIETY

ARTICLE I

A DICTIONARY OF THE EGYPTIAN LANGUAGE

BY EDWARD Y MCCAULEY U S N

READ OCTOBER 20 1882

PREFACE

In 1880 I made a manuscript copy of Dr Birch s *Egyptian Dictionary* (Vol v of Bunsen s *Egypt*) As it was inadequate for the present requirement I added to it a list of words compiled from translations lately made of papyrus texts and monumental inscriptions with the aid of Chabas' *Melanges Egyptologiques*, and the works of Grebaut, Deveria Good

The cartoons are made with great accuracy and uniformity, and in fact the production of such a work by process printing could only have been possible where great industry and artistic skill together with Oriental knowledge were found conjoined in one individual. In European capitals much of the drudgery of this kind of work is saved by the employment of fonts of hieroglyphic type, but up to the time of the appearance of this book there was not a single such font in the United States

He had projected other similar works of value, some of which were partly commenced, others merely outlined at the time of his death.

He added thus late in life to his many linguistic conquests that of Volapuk, which many believed would ultimately become the universal language He wrote, read and spoke this now neglected creation with facility.

In 1892, Hobart College honored him with the degree of LL.D., *honoris causa*.

He was a man of robust health and a strong believer in the advantage of manly outdoor exercise and sports One of his greatest delights to within a year of his death was to join a favorite relative who was identified with hunting in all its forms, in expeditions to Barnegat Bay in the duck-shooting season, where he would rise at four and lie in a sink boat through the bitter cold of our bleak November mornings waiting for a flock of ducks to arrive So far from enfeebling him this seemed to stimulate his blood, and he would return browned and healthy from these expeditions.

In addition to singularly handsome features and a well proportioned form, which age seemed not to affect, he maintained an erect and graceful carriage to the very last day that he could stand

To those accomplishments, such as fencing, sparring and dancing, natural to a military man who had seen much of the best of the world's society, he joined others less frequently observed in a Navy officer, such as riding on horseback and playing billiards. Few persons made more graceful cavaliers than Admiral Macauley, and the impossibility of practice at billiards on the element which was that of his chosen profession did not prevent the accuracy of his strokes when on shore.

Though severe in the execution of duty on the quarter deck, or on the

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win, etc. Finally, I closely compared the work with Pierret's *Vocabulaire*, the latest issue of the kind, resulting in the dictionary now laid before the Society

I claim for it that it contains all the words that could be obtained from the sources I have just mentioned, and probably all that have been defined by Egyptologists up to the present time.

These words, and their variants, are placed under their proper initial symbols or characters, which, being carefully indexed, even the uninitiated may work out the meaning of a hieroglyphical text

I have not placed any geographical or theological names in the book. Our constantly increasing information on the geography and religion of ancient Egypt, necessitating constant correction, I thought it better to restrict myself to the compilation of a book that would be of use in translating ordinary lingual text.

PHILADELPHIA, December, 1882. E. Y. McCAULEY.

court martial, he was considerate of the weaknesses of human nature and generous when these had been exhibited in offenses to himself Many a subaltern officer and enlisted man was spared by Admiral Macauley from extreme punishment and lasting disgrace, and that, too, occasionally in the face of persistent ingratitude This is all the more praiseworthy in consideration of the fact that Macauley himself was passionate and sensitive, as are most artistic natures; and proud, as are most upright ones It was often a hard struggle in a mind like his between impulse and justice, nor was it always that exactly the right course to pursue was found on the moment. But justice would assert herself after an adjournment for time to reflect, and no man's honest cause was in danger from arbitration by Admiral Macauley *

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* The official record of Rear Admiral Macauley is as follows

Appointed midshipman September 9, 1841, ordered to Mediterranean squadron February 17, 1842, warranted December 30, 1843, sent to Naval School November 12, 1845, transferred from the *Delaware* to the *Cumberland* ordered to the *United States*, February 2 1848, returned to the Naval School, detached on waiting orders July 6, 1848, ordered to receiving ship at Philadelphia September 16, 1848, ordered to the *Constitution*, warranted passed midshipman August 10, 1847, detached on sick leave October 8, 1850, joined the *Independence* October 1, 1851, detached and granted three months' leave June 30, 1852, ordered to the *Saranac* July 30, 1852, ordered to the *Powhatan* August 18, 1852, promoted to Lieutenant September 14, 1855, warranted Master October 23 1855, commissioned Lieutenant October 25, 1855 detached on three months' leave February 18, 1856, ordered to receiving ship at Philadelphia May 27, 1856, recommissioned August 25, 1856, ordered to the *Niagara* March 21, 1857, detached on waiting orders November 27, 1857, ordered to the *Niagara* February 1, 1858, detached on three months' leave August 19, 1858, ordered to the *Observatory* September 20, 1858, detached on waiting orders February 22, 1859, ordered to the *Supply* August 4, 1859, resignation accepted August 19, 1859 Commissioned Lieut Commander July 14, 1864, ordered to Navy Yard, Portsmouth, N H, June 19, 1864, detached on waiting orders August 17, 1864 ordered to the Mississippi squadron September, 1861, detached on waiting orders August 2, 1865, special duty at Philadelphia August 10, 1865, promoted Commander September 27, 1866, ordered to examination for promotion November 27 1866, Fleet Captain and Chief-of Staff North Atlantic squadron February 15, 1867, commissioned March 14, 1867, detached on waiting orders January 4, 1868, ordered to Navy Yard, Portsmouth, N H, August 26, 1868, ordered to the Naval Academy November 7, 1870, recommissioned from July 25, 1866, June 2, 1872, ordered to the Navy Yard at Philadelphia, August 17, 1872, promoted Captain September 8, 1872; ordered to examination for promotion September 11, 1872, ordered to be ready for sea October 18, 1872, ordered to command of the *Hartford* October 22, 1872, commissioned February 10, 1873, ordered to command the *Lackawanna* June 4, 1873, detached on waiting orders June 22, 1880, ordered to examination for promotion June 30, 1881, promoted Commodore August 7, 1881, ordered to special duty Bureau of Navigation September 29, 1881 commissioned November 4, 1881, ordered to *Hartford* October 16, 1883, on waiting orders November 17, 1883, ordered to League Island Navy Yard November 17, 1884, ordered to examination for promotion February 24, 1885, ordered to the command of the Pacific Station, turned over the Pacific Station November 6, 1886, placed on the retired list January 25, 1887, given permission to leave the United States May 23, 1887.

Admiral Macauley died at his country home, "Mist," on Canonicut Island, near Jamestown, R. I., on September 14, 1894, after a painful illness, so courageously and uncomplainingly borne that no act of his life was more noble and heroic.

Edward Yorke Macauley,

REAR ADMIRAL U. S. N.

In loving memory a wreath of bay,
  My comrade and commander, I would bind
And on your tomb this heartfelt offering lay
  Addressed to those you loved and left behind.

For those alone who knew the daily glow
  Which love and confidence, the mute caress,
Gay chidings, and a merry laugh bestow
  Can share the feelings which these lines oppress.

Your life was votive to your flag. Full well
  You filled its duties and deserved your fame.
It were sufficient in your praise to tell
  You added honor to an honored name.

No calumnies have ever dared besmirch
  That trust which you have held; nor ever can.
Your leisure you devoted to research,
  And died as you had lived—a gentleman.

Your name, when it is spoken where we met,
  Is charged with memories of him we miss,
And sounds the chord of friendship and regret,
  If feebly when compared to moods like this.

Farewell, Commander! To each other we
  Are shadows, while a memory are you.
Who knows which most is real? But happy he
  Who leaves as many mourners and as true.

P F.

The Yardley Fault.

By Benjamin Smith Lyman.

(*Read before the American Philosophical Society, September 6, 1895.*)

1. Situation
2. Presumptive Importance.
3. Color Break
4. Ocular Illusions
5. Dips of the Beds and Fault
6. Direction of Downthrow
7. Extent of Downthrow.
8. Grouping of Rock Beds.
9. Width of the Fault
10. Filling of the Fault
11. Fault not caused by Trap.
12. Conclusions

1. There is a fault of striking appearance in the railroad cut of the Bound Brook line of the Philadelphia and Reading Railroad nearly a mile west of Yardley Station. It is the same as the fault that was described by Prof Henry Carvill Lewis before the Geological Section of the Academy of Natural Sciences in March, 1880, as published, with a figure, in the Academy's *Proceedings* for 1880, pp 40 and 41.

2. The fault seemed highly important, and he remarked at the outset, "that it was not often that a section of a well defined fault was exposed for study Frequently a fault starts a line of erosion which obliterates all traces of it, and the actual junction of the faulted measures is either occupied by a stream or is so covered by talus that it can only be inferred from adjoining outcrops." It is quite true that a fault, great or small, must very rarely be exposed naturally; though its place is not so apt to be occupied by a stream as narrow river gorges or chasms often suggest, for they, perhaps, without exception, are merely the result of secular erosion without any fault at the outset. Faults, too, are probably not in general sudden disruptures leaving gaping abysses that may be filled by streams and afterwards widened into important valleys, but arise in small movements and increase by slow degrees through many long ages Meanwhile the surface erosion accommodates itself gradually to the changed circumstances according to the hardness or softness of the beds that may be brought to light, and the surface wash, except possibly in rare cases on the face of a cliff, obscures the junction of the two unmatched sides of the fracture. Artificial exposures of small faults are numerous, as, for example, in the railroad cuts near Phœnixville and Gwynedd, but such exposures of great faults are necessarily rare because great faults are comparatively rare; and they must seldom be encountered in railroad work, that keeps to the surface as much as possible, though they may be found somewhat oftener in mines The presumption, then, in the case of a fault exposed by a railroad cutting is that it is a small one, however important a look it may have.

3. The Yardley fault is so striking because a thick bed of bright red shales on the western side abuts against light brownish gray shaly and somewhat pebbly very soft sandrock on the east, with no lower

fault to the sandrock exposed and with no thick bed of red shales in the exposed section of nearly a hundred feet above. If, then, the downthrow were to the west, it would have to be more than that hundred feet, or the red shales would be found in the eastern part of the cut.

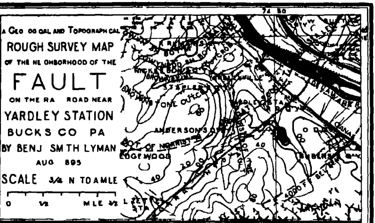
4. Certain ocular illusions give at first the impression that the downthrow is really to the west. On the north side of the railroad, where, as Prof. Lewis says, the fault is best observed, the slope of the cutting, combined with the steep inclination of the fault and its direction, makes the fault appear to rise eastward, or dip westward, as represented in his figure; and a westward dip would imply a westward downthrow. Furthermore, as he mentions and represents in his figure, the light brownish gray shaly sandrock above the red shales has, or had some years ago, the appearance of being turned up at the side of the fault, as if forced into that position by a downthrow westward But that appearance is now less noticeable than formerly, and seems to arise from the fact that there is a slight depression, probably less now than formerly, in the side of the cutting just west of the fault. As the northwesterly dip of the beds is nearly at right angles with the direction of the railroad, the depression of itself brings the exposed edges of the layers to a lower level than at the fault, and readily gives to an observer standing on the railroad the impression that the layers just there dip away from the fault more steeply than they really do. Indeed, the southwesterly course of the railroad, a little more southerly than the strike of the rock beds, thereby rising slowly across the measures, makes his figure give the impression that the rocks dip easterly, instead of northwesterly.

5 The rock beds here dip about twelve degrees, north about twenty-seven degrees west (true meridian). The fault dips about seventy seven degrees, north about seventy eight degrees east, that is, with a strike of about north twelve degrees west and an easterly dip, instead of the northeasterly strike and westerly dip that the slope of the cutting is apt to make one believe at first. The accompanying plate gives a geometrical construction from those observations, carefully verified at visits several years apart, and shows the true position of the fault and the probable relation of the beds on both sides.

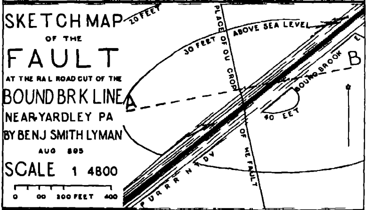
6. As the fault dips easterly, the downthrow is beyond a doubt in the same direction. For this is plainly not a reversed fault, longitudinal to the strike, like almost every one of the anthracite region,' caused by an overthrust of sharply folded beds under strong horizontal compression; but is a normal fault, transverse to the strike and occasioned apparently by the unequal sinking of the beds into the underlying rock mass, plastic under their enormous weight. There is no reason whatever to suppose that the downthrow here is not in the direction of the dip of the fault according to the almost invariable rule of normal faults.

7. There is, then, no evidence at all that the extent of the downthrow is more than a dozen feet, and the shallowness of the cutting together

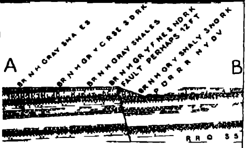
A GEOLOGICAL AND TOPOGRAPHICAL
ROUGH SURVEY MAP
OF THE NEIGHBORHOOD OF THE
FAULT
ON THE RAILROAD NEAR
YARDLEY STATION
BUCKS CO PA
BY BENJ SMITH LYMAN
AUG 895
SCALE 3/4 IN TO A MILE



SKETCH MAP
OF THE
FAULT
AT THE RAIL ROAD CUT OF THE
BOUND BRK LINE
NEAR YARDLEY PA
BY BENJ SMITH LYMAN
AUG 895
SCALE 1 4800



SECTION
ACROSS THE
FAULT
IN THE
LINE A B



SCALE — 400 FEET TO AN INCH
HORIZONTAL AND VERTICAL ALIKE
THE EXTENT OF THE FAULT AND THE LOWER LIMIT OF THE GRAY SHALY SAND ROCK NEAR THE RAIL ROAD BED ARE NOT PRECISELY KNOWN

with the talus at its sides does not make it certain that the downthrow is more than half a dozen feet. The light brown soft shaly sandrock overlying the dark red shales is likely to be the lower part of the similar rock bed that they abut against at the fault, but it is not known how near the top of the dark red shales comes to the surface on the east of the fault, nor whether it may not even exist there above the level of the railroad bed, but concealed by the talus at the bottom of the cutting. As such faults are apt to be small, and as none of more than a few yards have been found among the numerous exposures of like faults in other railroad cuttings of Bucks and Montgomery counties, it is highly probable that the downthrow here is not more than about a dozen feet.

8. The rocks, therefore, west of the fault are almost wholly lower beds than those east of it, and it is not strange that they should be of different character. Those on the east are in great part light gray sandrock, weathering light brownish gray, with mustard seed quartz grains, and much decomposed white feldspar and black grains, apparently decomposing hornblende and mica, and are in some parts very pebbly with pebbles of quartz and black metamorphic rock. The materials seem to be those of the gneiss only a mile distant to the south. The rocks west of the fault are in great part red and shaly, but in part light gray and light brown sandy shales. There is not here any marked division "between the lower white conglomerate and the overlying red shale," as suggested by Prof. Lewis, for the gray somewhat pebbly sandrock on the east of the fault belongs to much higher beds than the more decided conglomerates a few hundred yards to the south. There are many alternations of red and gray hereabouts and the change at the fault is but one of them.

9. The fault on the north side of the cut is perhaps two feet wide towards the top, but about half way down widens with irregular outline to perhaps four feet, as exposed in 1887, or to 5½ feet, as stated by Prof. Lewis in 1880. At present the loose earth, or talus, partly conceals the middle and wider portion of the fault.

10. The width of the fault is filled with loose, crumbling, mostly incoherent materials that are in the main of a very dark or blackish brown color at the widest part. Prof. Lewis took the material to be decomposed trap, and the fault to have been filled by a trap dike. On close examination, however, the material is seen to contain much quartz in small colorless grains of irregular and rounded shapes, dark mica scales, much decomposing, very soft white, and in part slightly yellowish feldspar, at least partly plagioclase and perhaps wholly so; and the dark brown portion seems to be decomposing hornblende. The constituent particles, then, are all such as are found in the neighboring gneiss and are mostly to be distinguished in the sandstone just east of the fault, and have no doubt been washed into the crevice occasioned by the fault. The occurrence of so many quartz grains is of itself proof that the material could not be decomposed trap. Besides, a trap dike would almost cer-

tainly have left at least some blocks of trap on the surface and no trap blocks are known to occur anywhere within seven miles of the fault.

11. He considers the fault to have "been caused by the pressure from below of the molten trap," and in support says that near Taylorsville he has "observed the dip of the red shales changed in the vicinity of a trap dike," a whole quadrant in direction. A more thorough investigation, however, has shown that the trap there is undoubtedly an overflow sheet conformable to the shales, and not a dike that has changed the dip of the shales. He also says that "near Harleysville a dike below the surface has metamorphosed the strata into black argillite and reversed the dip to the south " It is now known that Harleysville is near the axis of an important basin, or synclinal, somewhat closely though not steeply folded, and is on the belt of Perkasie Shales, that contain some dark and blackish beds, as well as many greenish ones, through a great length of outcrop, often several miles from any trap, and with no reason whatever to suppose the dark color to come from dikes below the surface instead of from the character of the original constituents of the shales, or to suppose the dips occasioned by the trap.

12. It is clear, then, that the Yardley fault is simply a transverse or normal fault, quite unconnected with any trap dike, that the fault dips eastwardly; that the downthrow is no doubt in the same easterly direction; that notwithstanding the conspicuousness of the fault through the contrasted colors of the rock beds, the amount of downthrow is probably no more than about a dozen feet; and that the extent of the fault along its strike is consequently not very great. As the fault is nearly at right angles with the strike of the rock beds, it would give, even if large, no great support to the old idea that the apparent thickness of the New Red might be due to a series of great faults parallel to the strike—an idea that has made the least appearance of an important fault in the New Red seem highly welcome to geologists Such longitudinal faults are indeed generally of greater extent than transverse ones; but, as they can arise only from tremendous pressure on beds of great firmness, it is hard to imagine their occurrence in a region of such gentle dips and weak shaly beds as our New Red field.

The Chalfont Fault Rock, So Called.

By Benjamin Smith Lyman.

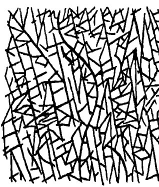
(Read before the American Philosophical Society, September 6, 1895.)

1. Situation.
2 Prof Lewis's Description Cited
3. The Two Photographs.
4. Southwesterly Dips in the Eastern Photograph.
5. Southwesterly Dips in the Western Photograph.
6. Southwesterly Dips Confirmed.
7. Saddle and Basin.
8 Conclusions.

. Just east of the railroad station at Chalfont, in Bucks county, Pennsylvania, a deep rock cutting begins and extends two or three hundred yards eastward. It is the spot that the enthusiastic geologist and amiable gentleman, Prof. Henry Carvill Lewis, not long before he was so lamentably cut off in his early prime, particularly mentioned in his account of the immense fault that he supposed to affect the "great trap dike across southeastern Pennsylvania," described in his paper read before our Society on May 18, 1885, and published in our PROCEEDINGS, Vol xxii, pp 438–456

2. He says (p 449): "The line of fault is marked by abnormal dips, blackened and broken shales, 'slickensides,' and other evidences of violent disturbance, along its whole length. But its most characteristic feature is the occurrence of a zone of typical *fault rock* This very interesting feature is composed of a mass of gray, shaly argillite, so crushed and cracked in every direction, and so baked and changed in character, that it has lost all traces of stratification. This peculiar rock, evidently the result of movement at the time of faulting, is cut by innumerable cleavage planes, crossing one another at every conceivable angle The small and irregular angular blocks thus produced are very generally covered by slickensides, the result of sliding motion This *fault rock* marks the line of fault, when all other indications fail, and has rendered it possible to fix the precise position of the fault from end to end. It fills a zone one hundred feet or more in width. The writer is not aware that such an extensive exposure of a fault rock has been previously described A few yards is usually given as the greatest width to which a fault rock attains, although similar instances will doubtless be found elsewhere The great development of this interesting formation along the Bucks County fault, leads to the conclusion that the process of faulting was a sudden event. The immense pressure which gave rise to the fault would appear to have been relieved by violent crushing and slipping, perhaps accompanied by earthquakes.

"The best exposure of this fault rock is in the railroad cut immediately east of Chalfont Station, on the Doylestown Branch of the Philadelphia and Reading Railroad —a locality which will well repay a visit. The accompanying sketch very rudely represents the appearance of the fault rock at this place."



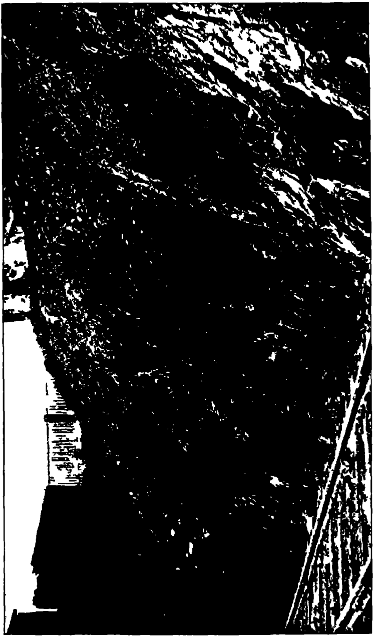
3. The geological structure can be more accurately understood by the help of the two new photographs here reproduced, showing a large and the more difficultly interpreted part of the north side of the cut. They were most obligingly taken, with his accustomed skill and excellent

judgment, by Mr E B Harden, formerly of the State Geological Survey, Assistant Geologist and Topographer and in charge of the Headquarters, Office and of Illustrations for the Reports While Prof Lewis's sketch gives the confused appearance of the numerous cleavage planes as looked at in a direction at right angles with the railroad, the photographs are views in line with the northwesterly strike of the rocks, and show more or less distinctly the dips and the bedding For the rocks are clearly in fact not confusedly broken fault rock, but simply dark gray and dark red hard shales that are folded in basins and saddles with somewhat steep dips (fifty to seventy degrees) such shales as occur extensively through Bucks and Montgomery counties and notably near the Gwynedd and Phœnixville tunnels as well as here and there along the banks of the Neshaminy for a dozen miles below Chalfont

4 The right hand edge of the eastern photograph (Plate xi), taken at about one hundred and twenty five yards east of the bridge over the western end of the cut and about five yards south of the centre of the railroad shows very distinctly a dip of about fifty degrees southwesterly (south about sixty three degrees west, true meridian) About the middle ground of the view against the tall post with a slender horizontal pole as a signal of danger from the bridge to brakemen standing on freight cars the edges of the rock beds are to be seen with a southwesterly dip of about seventy degrees, that continues almost uniform westward and is sixty five degrees, south about forty eight degrees west near the western end of the cut towards the bridge That dip is also indicated in the more distant parts of the picture by the course of the small hollows and gullies that descend from the top of the cutting

5 These western dips are more distinctly seen, on a larger scale, in the second photograph (Plate xii) taken at about twenty six yards east of the bridge and about eight feet south of the centre of the railroad, looking in the same northwesterly direction along the strike The layer, for example, some fifteen inches thick that comes to the level of the railroad in the picture directly below the foot of the telegraph pole shows the dip unmistakably Another layer about two feet to the east of that one is also pretty clearly distinguished in the picture, and the edge of another parallel layer is to be seen about two inches, in the picture, to the west of the first mentioned layer Besides that, the parallel edges of several less striking layers, that can be perceived even in the photograph, corroborate what is still more unquestionable on the ground, the uniform southwesterly dip throughout the field of the western photograph Prof. Lewis's sketch apparently covered a portion of this field.

6 The steep southwesterly dips, then, are plain through most of the space covered by the two photographs On the ground, they are more over confirmed by the correspondence of small hollows occasioned by softer layers on the two sides of the railroad, as readily observed by Mr Harden The dips are still more easily recognized on the ground for some distance east of the eastern photograph. Likewise, about fifty feet



north of the western end of the railroad station (and the station is so close beyond the bridge that a small corner of the platform can be seen in the picture, beyond the right-hand abutment) an artificial rock exposure begins and extends nearly fifty yards westward, with unmistakable dips of forty degrees, south about fifty-three degrees west.

7. In the space, however, between the danger post and the strongly marked dips of the eastern half of the eastern view, the structure is not so uniform, and is not so clearly shown by the photograph, nor indeed so easily made out on the ground Ten yards along the cutting east of the danger-post and opposite the eastern end of a small stable on the top of the south side of the cut, and in the picture a little to the left or directly beneath the right hand telegraph pole, in the rather smoothly rounded projecting rock mass, there is a small rock saddle, or anticlinal, that can be seen on the ground with some care, and can even be perceived in the photograph, especially where the layers about the midheight of the cut begin to bend over from the westerly dip Six yards further east, on the western side of the first small depression or slight gully, and five yards west of the first strongly marked southwesterly dip surface, and in the picture almost directly below the telegraph pole, there is a small rock basin or synclinal, somewhat difficultly discerned in the photograph, yet still decidedly perceptible there with a little patience, particularly with the help of a strong magnifying glass, and quite visible on the ground. The partly obscure portion of the section, then, is at most a dozen or fifteen yards of the length of the cutting; and at right angles with the strike not more than eight or ten yards; and, as the photograph shows, it is apparently not the part represented by Prof. Lewis's sketch. It appears unfortunately impossible to make the dips of that portion extremely obvious in a photograph; but on the ground they can be seen with a little care, and have been distinctly recognized, not only by myself, but by Mr Harden, and, in December, 1888, by Dr Amos P. Brown and Mr. J. S Elverson. The place is now so precisely pointed out that it can readily be identified by any one visiting the spot and he can see for himself the accuracy of the description of the structure.

8. It is evident, then, that the rocks of the cutting are by no means fault rock, but merely steep-dipping and somewhat folded dark gray and dark red beds of the Gwynedd Shales, cut across at a sharp angle with the strike and much fractured with ordinary cleavage planes of many directions, and requiring for a perception of the structure to be observed at an angle of not more than forty-five degrees with the railroad instead of at right angles. The chief geological interest and value of the rock exposure, therefore, is not in its displaying a fault of otherwise incredible dimensions, with the unheard-of width of a hundred feet or more, and with the inconceivable heave of four or five miles for a nearly vertical trap dike , but in its showing how it may sometimes be a little difficult to distinguish the true bedding and dip among many confusing cleavage planes. The great fault, coming westward from the southern

edge of the island-like patch of paleozoic rocks near Doylestown, in fact does not go through the Chalfont cut at all, but nevertheless probably passes within a hundred yards north of it, as is shown by neighboring rock exposures on the other side of the fault and by changes in the color and character of the soil There is no reason to suppose that the fault, great as it is, heaves in the least the trap dike that does probably exist pretty close north of it, and the trap that occurs within two miles and a half south of the fault at four or five miles to the east must undoubtedly belong to quite a separate dike. Instead of one great dike there seem to be several smaller ones not continuous nor quite in line.

On Apatela.

By A. Radcliffe Grote, A.M.

(Read before the American Philosophical Society, October 18, 1895).

The genus Apatela has awakened considerable interest on account of the diversity of types among the larvæ of the different species. As will be seen from my lists of the N American species, these greatly exceed in number the European, and probably afford a larger number of these larval types, while nearly all of the European groups are represented in North America, the Agrotid fauna of the two continents being, as often insisted upon by me, closely related It follows that our nomenclature is derived chiefly from European sources. It may be said that the Apatelidæ are difficult to distinguish from the Arctiidæ, by exclusive characters drawn from the imago

I have only quite recently become acquainted with the extremely beautiful work of Dr. T A Chapman, on the genus Acronycta (Apatela) and its allies, London, 1893, a publication which at once placed its author among the foremost of the students of the new Lepidopterology, a school which has entirely broken with the old system under which the study had become sterilized, and was in danger of passing entirely into the hands of fanciers and dealers, at least in Europe. The results of the New School may be estimated by the statement, that the spectres of the metaphysical groups "Bombycidæ," "Zygænidæ," "Noctuidæ," "Tineidæ," which, especially the former, haunted our nomenclature, have been effectually exorcised The "Bombycidæ" have been shown to be composed of families belonging to no less than three superfamilies: Bombycides, Agrotides, Tineides; the results attained through phylogenetic and ontogenetic studies are now applied to classification.

In my list published in these *Proceedings* in 1883, I had separated the three families of which the "Noctuidæ" were then composed, and this classification is the basis of the catalogue published as Bulletin No. 44, of the National Museum, Washington, 1893. Recent studies of Mr. Harrison

G Dyar show, that we must place my Thyatiridæ between the Geometridæ and the Ptilodontidæ and divide the family[*] Noctuidæ (a preoccupied name in Aves which I have accordingly rejected from the Lepidoptera) into two distinct families, upon larval structure, my Apatelidæ and Agrotidæ

The families adopted by the new Lepidopterology may have exclusive characters offered in the larval stage. See Mr S H Scudder's *Historical Sketch*, 103, where the statement is made, that generic distinctions are as easily traced in the larva as in the imago If generic, then also family characters, since I have shown that the characters upon which all our divisions are based do not differ in essential respects *Papilio*, 3, 30, 1883. The family Apatelidæ has for its type *Apatela aceris* of Europe and includes, besides the typical genus Apatela (Apatele, Acronycta of authors), the genus Diphtera Hubner, 1806 (1811), with its type *orion*, to which genus our *fallax* belongs Here belong also the genera Microcœlia and Harrisimemna. Other genera included by me in May, 1895, my last list of our species, are probably correctly referred here, but Raphia is shown by Mr Dyar to be wrongly included and should apparently be removed to the Agrotidæ near Episema The larva of Leptina (Baileya) is unknown and this stage of several other genera incompletely studied, so that there will be some possible necessary changes My last list had for its special object the fixing of the generic types and the restitution of the oldest rightful names. It had little or no changes in arrangement to propose, but I may mention here, that the genera Calocampa and Lithomoia should be classed by themselves under the tribe Calocampini Grt, 1890, taken out of the Orthosiini, while Lithophane and allies should not go with them, but remain in the Orthosiini, to which group they naturally belong. The question of whether we are to assign tribal or subfamily rank to these divisions of the Agrotidæ, has not been satisfactorily solved But the possibility of a division into groups of the Agrotidæ is now virtually admitted, against Lederer's rejection of all such assistance to classification. More recently Hampson has proposed a division into subfamilies The number of generic titles proposed for species of the genus Apatela in Europe is considerable and their correlation with structural groups a difficult task I have applied to the names the historical method, with the result here noted The subgeneric groups here proposed are of unequal, and in some cases, *i e*, Arctomyscis, of doubtful value. Yet there is no reason for their rejection without very careful study, above all of the American species which may throw fresh light upon their standing. In the case of Jochœra, the discovery of the American *funeralis* assists the view that the group is natural and therefore valid. The clubbed hairs are peculiar, reminding one of the primary hairs of *Saturnia pavonia major*.

[*] See my *Systema Lepidopterorum Hildesiæ*, August 15, 1895. Since then I have received Dr Chapman's papers which show the affinity of the Cossidæ and Tortricidæ, the former family should therefore immediately precede the latter. The family Eriocephalidæ should be added at the last. For this Packard quite recently proposes the suborder *Lepidoptera laciniata*.

Gen.: APATELA Hubn., 1806 (1811).

Type. *A. aceris*

(*a*) EUROPEAN SPECIES.

Subgenera·

1 *Triæna* Hübn, 1818, type *psi; tridens, cuspis*
2 *Hyboma* Hübn, 1818, type *strigosa.*
3 *Jocheæra* Hubn, 1818, type *alni.*
4 *Acronicta* Ochs., 1816, type *leporina.*
5 *Apatela* Hubn, 1811, type *aceris.*
6 *Cuspidia* Chapman, 1893, type *megacephala*
7 *Pharetra* Hubn., 1818, type *auricoma; rumicis.*
8 *Arctomyscis* Hubn, 1818, type *euphorbiæ* (*euphrasiæ*).
9 *Viminia* Chapman, 1893, type *menyanthidis*
10 *Bisulcia* Chapman, 1893, type *ligustri.*

Of Triæna, Guenée's generic term Semaphora is a synonym, having the same type Dr Chapman's objection, that Guenée did not include the whole group, is not valid, since the rules under which the nomenclator works deal with names applied to any member of a group It were too much to demand of genera and species makers, those *avant couriers* of biological research, that they announce at once the discoveries of Müller, Dyar or Chapman The distinction offered by Arctomyscis as restricted by me is of doubtful value, it appears to be nearly limited to the white secondaries of the male The term Polymixis Hubn, 1818, is restricted to *polymita* L, under Chapman's action in taking out *ligustri* in 1893 Upon becoming autoptically acquainted with *euphorbiæ*, I find that this species passes under the name *euphrasiæ* in North Germany. It is so named in the museum here, it is this species I intended to designate as type of the term Arctomyscis. There appears to be another *euphrasiæ* in South Germany, which may or may not be different I have not seen it These types for the most part are fixed by me in 1874–1876, the action should be respected, unless it can be properly overturned.

(*b*) AMERICAN SPECIES.

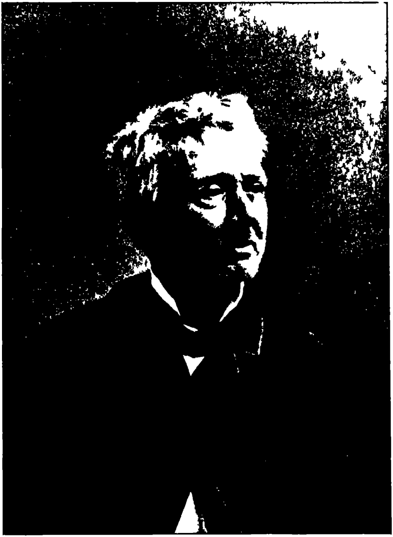
There are first to be separated, as distinct genera probably, Merolonche Grt, which contains two Californian species with the type: *spinea* Grt., and *Eulonche* Grt., from the Atlantic district, with three species: *oblinita* Abb and Sm. (= *salicis* Harris), which is the type, *lanceolaria* Grt., and *insolita* Grt This latter genus is characterized by its pointed wings and sunken head and has no European representative It shares with Mastiphanes a Lithophanoid ornamentation. I have not been able to recognize any American representatives of the *s. g.* 2. Hyboma, my *sinuata* must be compared. Of 1. Triæna, we have a strictly representative species in *occidentalis* G. and R., and the same is true of 3 Jochæra, where we have *funeralis* G and R Of 4 Acronicta, we have probably several species, such as *lepusculina, vulpina* and *felina* Of 6 Cuspidia, I know of none, but it is not unlikely that an analogue of *megacephala* may be found Of 5 Apatela, it is probable that we have several, but the synonymy is not clear, since Abbot's *aceris* (*acericola*) and *hastulifera* are not surely made out Guenée's and Walker's *hastulifera* is — *americana* Harris Of 7 Pharetra, we have *impressa* Wlk (*verrillii* G and R), and probably others Of 8. Arctomyscis, we have *sperata* Grt Of 9. Viminia, I know of none 10 Bisulcia , our *superans* Guen , must be compared. A comparison of the imago alone has led me to the belief that we are very rich in species of Triæna, such as *morula, quadrata* But the great mass of species must yet be compared carefully with the European types and every effort made to keep down the subgeneric synonymy The following names have it seems, no European representatives

11 Megacronycta Grt , 1874, type . *americana* (this may fall in with the subgeneric title Apatela)
12 Lepitoreuma Grt , 1878, type : *ovata ; inscripta, hamamelis, hastitata*
13. Mastiphanes Grt , 1882, type · *xyliniformis ; edolata, extricata, pallidicoma, lithospila.*

Lepitoreuma is notable from the shape of primaries and the raised scale

I have said that the groups here indicated are of unequal value and a study of the European species had led me to consider the advisability of uniting 7 and 8, as also 1 and 2 To the extraordinary structure of the larva of Jochæra it would seem in any event right that a separate name should be applied , the imago is near Triæna, and from the pupa Dr Chapman places it in the same group This type brings up the whole question of "representative" species, a subject full of interest. The imagos of the European and American species show recognizable differences, while the extraordinary larval type has maintained itself apparently unchanged In the *Annals of the Lyceum of Natural History*, December, 1876, I showed that the differences between such species are shown upon the upper surface of the fore wings chiefly, and of this the species of Jochæra are an example But Prof. J. B Smith has shown that between the European *Agrotis augur* L , and the American *Agrotis haruspica* Grt , the most important distinction is to be found in the structure of the male *genitalia* As I have pointed out, this would prove that the pattern of ornamentation may be more persistent than characters of ultimate structure ; since, that both these now separable and separated species had a common origin, admits of no reasonable doubt. In the *Bul. B. S. N. S.*, i, 130, quoted by Prof. Morse in his address before the Section of Biology of the Am. Ass Adv Sci., 1876, I showed the probability that the larvæ of Apatela had varied through inheritance or natural selection influenced by its surroundings and its habits so that the larval differences have been evolved by a natural protective law These views have been recently more fully brought out by Mr Dyar The moths on the other hand have remained of a more uniform gray color copying to some extent the bark of the trunks of the trees against which it is their habit to rest in the daytime Thus it was shown that the larva varied independently of the moth suiting itself to the very different conditions under which its life was passed I concluded in 1876 that the immature stage of growth has submitted independently to modification I allude to these observations now mainly to show how wonderfully these larval modifications have been retained in the case of the American and European representative species and to draw attention to the possibility of ascertaining the oldest larval type in the genus from which the others may have been in time evolved It would seem as though both protective forms (Bisulcia) green like the leaves and repellant forms (Jocheæra) occur in this same genus The usual larval type of Apatela may now be found perhaps in Pharetra hairy gayly colored and bristled resembling Arctia or again with longer dorsal tufts (Triæna) recalling Notolophus A light fleecy covering of silky hair in Acronicta may as Mr Dyar suggests be protective it brings to mind the larva of Spilosoma One of the most beautiful larvæ is that of *Apatela aceris* the type of the genus with dorso lateral tufts of fawn-colored hair enclosing a series of bright markings on the back it is probably repellant While Dr Chapman s studies of the pupæ give us three principal types it seems that more are afforded both by the larval and imaginal forms of Apatela A grouping from the imago alone will lead to a different arrangement from that by the larva or by the pupa Thus I prefer to increase the subgeneric divisions in this genus in the effort to fit our nomenclature to the facts Certain of the groups show a greater general correspondence between larva and perfect insect that is they contain a greater number of species generally agreeing in both stages these are Triæna and Pharetra Whether in these groups the species have been more recently separated as suggested by Dr Chapman is a matter of doubt but seems a reasonable suggestion This view would fall in with what I have suggested to have happened in other cases such as Hemileuca Datana Phalera There would seem to be no genus which offers a more interesting field to the biologist for exploration and the opening afforded by Dr Chapman s work will guide the student of our richer fauna to still more important results arising from his larger material

ROEMER MUSEUM HILDESHEIM, October 1895



P. F. Rothermel

Memoir of P. F. Rothermel.

By Joseph G. Rosengarten.

(Read before the American Philosophical Society, November 1, 1895.)

Peter F. Rothermel, who died August 15, 1895, in his eighty third year, was elected a member of the American Philosophical Society, January 17, 1878, in recognition of his distinction as an artist. Born at Nescopach, Luzerne county, Pa., July 18, 1812, he came to Philadelphia in 1820, where, after the ordinary common school education, his father put him to studying land surveying, ignoring the boy's decided tendency to artistic pursuits, indicated at a very early age. At twenty two he overcame paternal opposition and began to study art under John R. Smith and later under Bass Otis, a portrait painter. At thirty he married and settled to work in what was then known as "Art Row," on Sansom street, east of Eighth. From 1847 to 1855 he was a Director of the Academy of Fine Arts, in 1856 he went abroad for three years, studying in Rome and in other Italian cities, and in England, France, Germany and Belgium, thus equipping himself for his profession. In 1859, on his return home, he was elected a member of the Academy and gave his pupils the benefit of his own studies.

Among his well-known historical pictures are "De Soto Discovering the Mississippi," "Columbus Before Isabella the Catholic," "The Embarkation of Columbus," a series of pictures illustrating Prescott's *History of the Conquest of Mexico*, "Van Dyke and Rubens," "King Lear," "The Virtuoso," "Christian Martyrs in the Coliseum," "Patrick Henry before the Virginia House of Burgesses," "Paul at Ephesus," "Paul Preaching on Mars Hill," "Paul Before Agrippa," "Trial of Sir Henry Vane," "The Landsknecht," "St. Agnes" (owned, in St. Petersburg), "Christabel," and "Katharine and Petruchio." Many of them have been engraved, thus spreading his fame and making his work known far and wide, so that he was recognized as one of our leading artists. After the close of the Civil War he was commissioned by the State of Pennsylvania to paint a picture illustrating the Battle of Gettysburg, and this great canvas, surrounded by a series of sketches of episodes in the battle, now hangs in the State Capitol at Harrisburg.

Even in his old age he loved his art and was a friendly critic of young artists, making them happy by his sympathy and encouragement, and he was a welcome guest at all their meetings, where he revived the traditions of his own early associates—David Edwin, the engraver, a storyteller of great excellence, who set the table in a roar after the first round of punch; Russell Smith, Thomas Ashton, Joseph Kyle, Thomas Officer, Holmes—at the meetings of the old Artists' Fund, at the hotel in George street above Sixth. His old age was graceful and genial, and his memory as a man and as an artist is one that will long be dear to all who knew and loved him

The Rothermels came originally from Germany by way of Holland the first American of the name reaching Pennsylvania in 1708 His descendants settled in the romantic valley of the Wyoming where the future artist was born He in turn became the father of three children—one son is a successful member of the Philadelphia Bar The country home of Rothermel was the scene of his quiet old age where his friends young and old enjoyed his pleasant reminiscences of his long and active life of his meeting with the great artists abroad and at home and his genial and kindly encouragement to the younger artists was always generously given His visits to the city and to the Academy of Fine Arts and other gathering places of artists were always the occasion of hearty greetings and he modestly received the praise of his numerous admirers

His family have a short autobiographical memoir in which Mr Rothermel makes due acknowledgment of his earliest friends among them Col Cephas G Childs himself an engraver of excellent taste and discernment and Prof J J Mapes of New York and in Philadelphia the Messrs Edward and Henry C Carey James L Claghorn Henry C Gibson and others gave him valuable and substantial recognition by commissions which enabled him to go abroad and perfect himself in the great foreign art schools and galleries He speaks in terms of generous praise of Leutze and Frankenstein and in the warmest admiration of Thomas Sully the leading painter of female heads in this country after Gilbert Stuart who was passing off the stage as Sully came on it His skill grace color gave his portraits of women a beauty quite his own and some of his portraits of men are of a high order of excellence but most of all Rothermel dwells on Sully s charm of manner his genial nature his sympathy for young artists and the beautiful old age spent in the house and the studio that was one of the landmarks of the city just across the way from the rooms of the American Philosophical Society where there are excellent examples of his work

Mr Rothermel like the late Mr Lambdin was elected a Director of the Academy of Fine Arts in recognition of his excellence as a man as well as his distinction as an artist and he worked hard for the establishment of the schools that contribute so much to the value and importance of the Academy On its walls hang some of his early and some of his best pictures He himself says that in one of them he introduced copies of the original casts of the persons figuring in his historical portraits and justifies this as far better than the fashion set by Cornelius and other German artists of copying largely from Raphael as an evidence of admiration As Chairman of the Committee on Education of the Academy he labored hard to elevate the standard of its schools and with substantial success He suggested the purchase of copies of casts of the best examples of Greek and Roman sculpture for the use of the antique school, the opening of the library of the Academy to artists and art students and that public lectures on art be given in the Academy regularly He also urged improvements in the life schools and annual prizes for the best paintings and drawings of the pupils from life from the antique and of architectural subjects and thus he aided in the establishment on a sound basis of the schools that have now grown to be so important a part of the work of the Academy and so influential an element in the sound training in art in this city His only official recognition was his election as an Academician an honor shared with Sartain and good workers in the cause of art and art education in this city Mr Rothermel always claimed that artists should have a larger share in the management of the Academy of Fine Arts and thus keep pace with the great foreign academies in which the administration is entrusted to the leaders in the various branches of art He attributes the success of numerous art associations in New York to the energy of the artists in their management and thinks that the growth of art in New York is largely due to their constant presentation to the public of the best examples of foreign and American art In writing in his old age in the retirement of his country home he dwells on the want of recognition of artists in this country where art is too often looked on as a trade which requires no capital and against this view he says Labor is the badge of all our tribe and no amount of talent or genius can do without it The artist s own love of art is his best incentive The love of nature and of truth a firm determination to do the best to express from his own standpoint his own vision paramount and then in spite of laughter from friends and sneers from enemies—the artist who can stand all this has been at least true to himself

In 1856 Rothermel went abroad armed with twenty commissions secured for him by James L Claghorn one of his kindest most generous and most constant friends He visited London Brussels Paris Antwerp (where his enjoyment of Rubens recalled a story that when Eichholz disparaged Rubens to Neagle and asked the latter what he would say if he Eichholz painted as good a picture as Rubens Descent from the Cross it was said in view of a copy exhibited in Philadelphia and Neagle brusqely answered Say ! said Neagle I would say here is a new miracle !) Duesseldorf where he found Leutze hard at work up the Rhine through Switzerland the Italian lakes Genoa Venice where he says he was taken captive by its beautiful architecture the enemy of the correct and classic Florence where he went seriously to work in the study of the old masters then Rome where he remained from October 1856 to June 1858 spending some time in the picturesque neighboring villages He painted King Lear for Mr Joseph Harrison a St Agnes which went to St Petersburg and a Rubens and VanDyke also bought by a Russian He met and made friends with Page Terry Chapman Freeman Akers Ives Rogers Bartholomew and with them discussed art At Orvieto he met Hawthorne eloquent even in his shy way At Perugia Assisi Arezzo Bologna Ferrara Verona and Padua he studied the great masters and at Ferrara he met William Cullen Bryant at Florence Powers and each city had its lesson He studied Titian and Tintoretto and Paul Veronese in Venice and compares them with careful analysis of their special qualities Passing by Verona and Botzen and Innspruck to Munich where he saw the works of Cornelius and Kaulbach and Hess all feeble after the great Italians yet noteworthy and carefully criticised by Rothermel he visited Nuremberg and Dresden Leipsic and Berlin returning by way of Strasburg to Paris where he exhibited some of his own pictures in the Salon of 1859 receiving honorable mention and escaping (as he puts it) a medal because the supply was exhausted by the French artists Returning to Philadelphia Mr Joseph Harrison gave him a studio, where he painted King Lear (still in Mr Harrison s gallery) he first made a sketch portrait of Forrest for the head but afterwards made it entirely ideal the better to express his own fancy His productions were bought by Messrs Clarence H Clark John Rice Matthew Baird H C Gibson Charles Gibson E H Fitler W Dougherty James S Martin and thus he was honored in his own home He notes that Sully was reported to have received but seventy five dollars for his fine portrait of George Frederic Cook the tragedian which Rothermel thinks perhaps the very best life size portrait in the country In his autobiographical memoir—only a fragment—he records the fact that he painted his Gettysburg in Mr Harrison s studio and his intention of describing his preparation his studies and his gradual progress but unfortunately nothing of this is preserved It is greatly to be regretted that he did not thus put on record his own story of his greatest picture that it might be printed as the artist s own analysis The picture has a place of honor in Harrisburg in the Hall of Trophies of the State Capitol

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Jasper and Stalagmite Quarried by Indians in the Wyandotte Cave

By H C Mercer

(Read before the American Philosophical Society November 16 1896)

I beg to call the attention of the Society to these objects from the Wyandotte cave in Indiana as illustrating one of the features of what might be called the comparatively modern archæology of caverns one of the relations of the daily life of the North American Indian to subterranean galleries in the limestone

Before describing the specimens from the Museum of American and Prehistoric Archæology of the University of Pennsylvania let me say that I have been drawn into the exploration of caves in the hope of finding in the *Cultur Schichten* as the Germans call them or the layers of human rubbish superposed in series on the subterranean floors by ancient visitors, and representing epochs of human habitation, some positive proof as to the antiquity of man on the American continent

Just as the Drift Hunter, the oldest proved inhabitant of Europe, was found to have left traces of his presence in caves, just as the prehistoric European epochs of human culture, bronze under iron, then polished and then chipped stone, were found to be represented in caves by the superposition of films of this rubbish resting one above the other, so here in America we may hope to find similar evidence, if it exists If the Indian had a predecessor, we may expect to reveal proof of his presence in some cavern not difficult to discover, while if the Indian were an inhabitant in geologically ancient times, we ought to be able to demonstrate the fact, as such facts have been demonstrated before, by the occurrence of his relics associated with geologically older or extinct animals in the subterranean rubbish

As far as a search in the Eastern United States is concerned, the topography of the region east of the Mississippi has seemed to have an important bearing on the question No doubt many caves could be eliminated from the investigation for the sake of a first look at others which appeared, by their position, to constitute a key to the situation The thick precolumbian forest was traversed from northeast to southwest by a wooded mountain chain, and, as it was likely that early peoples had crossed this barrier to reach the Atlantic seaboard, it has seemed probable that the caves fronting practicable mountain passes, running from east to west, the traversing river valleys, in other words, would likeliest contain traces of all the immigrants that passed that way

So making use of the indispensable advice and assistance offered us by Professor Cope, we turned our attention to the two most important of these river pathways, and after a search with significant results in the Lookout cave on the Tennessee river at Chattanooga, and again at the awe-inspiring Nickajack cavern farther down stream, took for a time as our special field the longest and most practicable mountain and forest pass of all, the New river-Kanawha-Ohio Valley By following this, it may be said that a foot wanderer could, at least pains and at best advantage, proceed as primitive immigrants would proceed, eastwardly through the forest and across the mountains to the Atlantic shore Starting therefore at the head-waters of the New river in Virginia, advancing in a canvas boat down the rushing and rocky current, using railways where they helped us, and then wooden boats on the broadening stream when night-camping was abandoned, we followed the New river into the Kanawha, the Kanawha through its deep gorge into the Ohio, and the Ohio nearly to its mouth in the Mississippi, examining all the caves and rock shelters by the way

The time has not come to describe in full or fairly estimate the evidence thus collected Suffice it here to say, that as compared with prehistoric Europe everything was modern, that while in Europe you have many cave layers, here we found but one, namely, that representing the North American Indian, and, finally, that while in Europe human relics in the cave layers evidently reach back into geologically ancient times, because of their association with the bones of extinct animals, here, with two exceptions, the bones of animals, cooked and eaten by the cave visitors, were modern. In other words we had failed thus far to find any evidence of a race of mound builders antedating the Indian, or any trace of the so-called Paleolithic man, who, if he existed in the eastern United States, had, strange to say, avoided these caves, which had not only given shelter to the Red Man, but, as bits of glass, buttons and leather on the surface abundantly showed, had continually tempted the ingress of the white man.

Leaving, however, the presence of older layers in any Eastern caves to be settled by further search, since it may be doubted whether we have examined enough caves as yet to have banished Paleolithic man from the Appalachian region, let us repeat that there was abundant evidence to show that the modern Indian resorted to caves, for which reason the Wyandotte cavern, near Leavenworth, in southern Indiana, on the right bank of Blue river, about five miles from its mouth in the Ohio, one of the last caves visited on our expedition, was of peculiar interest. Though there seemed no use digging at its cramped entrance for well defined culture layers, though the cave, by its secluded position might have been classed among caves difficult to find and therefore of inferior promise to the explorer, nevertheless its archæology, relating to a comparatively modern time, presented considerations of importance. These referred to two discoveries described some fifteen years ago by Mr. H. C. Hovey, of Newberryport, and Mr. Collet, of the Indiana Geological Survey. Before the meaning of Indian jasper quarries had been disclosed at Piney Branch and Flint Ridge, these gentlemen, together with Mr. H. W. Rothrock, owner of the cave, had found not only that the Indians had quarried jasper, but that they had mined and carried away carbonate of lime (stalagmite) from deep underground recesses.

The splinters of jasper here shown were found by me in a room called the "Pillared Palace," and represent the work done by Red Men, when, in the treacherous light of primitive torches, they battered off jasper nodules with quartzite boulders and worked down to partial finish the desired blocks. Mr. Hovey realized that certain irregularities in the floor called till then "Bear Wallows" were the contours of heaps of this roughly chipped débris mixed with charcoal and containing hammer stones, the quarry refuse, in fact, which the Indians had left behind. I saw, as he did, the well-battered jasper nodules protruding in layers from the limestone walls, while, then, in 1894, the chips lay thick under foot. But though charcoal was easy to find on the floor, the boulder hammers had all, save one, been removed, and I failed to discover a finished blade or even one of the ruder wastrels, called "turtle-backs," now so familiar to the searcher at aboriginal quarries

The other discovery was that of the so-called "alabaster quarry," a place where heavy quartzite boulders had been used to batter away the side of a stalagmite, known as the "Pillar of the Constitution," some two subterranean miles distant from the entrance—a mine in fact in one of the large domed chambers where several cubic yards of the snow-white carbonate of lime had been removed from the vertical wall of an enormous fluted column.

A heap of splinters, from which I picked up these specimens as examples, showing the characteristic rectangular planes of fracture, lay under the hollow, where not only had several quartzite hammer stones been found by Mr. Rothrock, but a pick made of stag's antlers, such as Canon Greenwell found in the subterranean galleries of the Neolithic flint mines at Grimes Graves, in England, such, as again, M. M. Cornet Briart encountered underground in similar workings at Spiennes, in Belgium, and such as later explorers exhumed at Cissbury, in England, proving the use of stag's horns for digging in the stone age, an adaption of a natural convenience further suggested by a hoard of several score antlers discovered by Mr. S. Grimley's ancestor in a slate rift on Perkiomen creek, Montgomery county, Pa., where they had been probably stored for kindred uses by Indians. Notwithstanding the fact that I could find but one large boulder hammer at the "alabaster quarry," the proof of Indian work at the spot was satisfactory, and of a character, I believed, never noticed and studied before the discovery of the site, though I cannot (on the strength of observations on the growth of stalactites in the *American Naturalist* for December, 1894), with Mr. Hovey, ascribe great antiquity to a crust of stalagmite which partially overflows the quarried hole.* As I knew of no object made of stalagmite among the "Indian relics" in any collection or museum in the United States, it remained to be seen what the Indians did with the quarried fragments, why they left so many, apparently available, pieces behind, and what kind of fragments were desired. I came to think that it was a question of fineness of grain with them, and adaptability of size and shape to the kind of object intended to be made, so as to escape the great labor of rubbing down, a supposition that appeared more probable later, when I luckily found the other specimen here shown associated with aboriginal rubbish at a place near the entrance of the cave, where evidently the Indian had lost it after having brought it from the quarry, nearly two miles away under ground.

This discovery of my own helped to elucidate the other very interesting question suggested by what I had seen. What lights had the Indians used in their distant and dangerous wanderings and their prolonged quarryings in the cave? A question finally settled after studying numerous charred fragments of the shellbark hickory, which in many places scattered the subterranean floors I proved, by experiment with fresh bark outside the cave, that three or four pieces a foot long, pulled fresh from the tree and held together in the hand, will burn half an hour, making an excellent torch, which consumes slowly or fast, wanes to an ember or bursts into flame as you hold it up or down or wave it.*

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* Stalactites 60 centimetres long and fifteen years old, described by Prof. Franz Adami in the *American Naturalist* for December, 1894.

Two thirds of the Wyandotte cave had been unknown until 1850, when Mr. Rothrock, suspecting a purpose in a wall-like arrangement of stones at the corner of a large passage, removed them, and to his surprise crawled into an ante-chamber, leading into the most spacious and beautiful of the present galleries The ceiling of this low room then first seen was black with smoke, as it still is, and he described poles, some specimens of which are yet to be found, which appear to have been broken from the parent stem or cut by charring and with stone tools, standing in rows against the wall Then, as now, fragments of charred hickory bark strewed the floor, while moccasin tracks, now entirely obliterated, led away in many directions over the soft dust. In one corner of the ante-chamber lay then and lies still a heap of grass, sticks, bark, leaves and nuts, (a specimen of which rubbish I show) covered with dust and evidently placed there by the Indians Digging in this for an hour, I found the little block of stalagmite here shown, which specimen, I believe, the ancient quarrymen had lost, and, for comparison with which, I have brought two other pieces of stalagmite, partly worked and polished, found in one of the cliff dwellings of southern Colorado, one of which is almost the duplicate of the interesting piece found in the Wyandotte ante-chamber We have thus a chain of evidence First, to show the quarrying of stalagmite in the cave, second, to specify the kind of fragments sometimes desired and carried away from the quarry, and third, to show that similar fragments were polished and worked by other Indians at other places

To kindle the hickory bark torch, a good blaze was required, and I infer that the pile of grass and sticks in the ante-chamber was the remnant of a store of fuel resorted to when the torches waned or a relight was needed Not inconsiderable must have been the danger of a long ramble in the cavern with its alleged twenty-three miles of galleries, when provided only with these primitive lights, and I can imagine that a good many precautions were taken in the way of shouted signals, of comrades left behind, and of watches kept over a sort of reserve fire in the ante chamber, when, venturing their lives on the chance of a rude fire brand that must never be allowed to go out, the Red Men quarried jasper and stalagmite in the Wyandotte cave.

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* I had found bundles of coarse grass tied with *henequen* string used as torches by Indians in the cave of Rancho Chak in Yucatan, and had seen Indians carrying blazing torches of dry cactus stalks to light them in their search for water in the galleries of Loltun, another cavern in the Sierra de Yucatan, near Tabi.

Some Words from the Andagueda Dialect of the Choco Stock.

By Daniel G. Brinton, M.D.

(Read before the American Philosophical Society, Nov. 15, 1895.)

The Andaguedas are a tribe called by themselves *Emberak*, which means simply "men" or "people," who wander about the upper tributaries of the Atrato river, Colombia, South America, principally on its right bank. They are called the Andaguedas, from the river of that name, and it is from a small branch of the tribe that the subjoined vocabulary has been taken. It was obtained for me in June last by Mr. Henry Gregory Granger, at the Capio Gold Mines, on the river mentioned. He carefully verified the words by subsequently uttering them to Indians other than those from whom he learned them, and in every case thus proved their correctness.

He describes the Andaguedas as quite short in stature, the males averaging about five feet and the females about four feet in height. This is noteworthy, as other observers have spoken of them as taller than their neighbors, the Cunas

They are migratory, go nearly naked, have few arts, but make pottery. Their favorite weapon is the blow-gun, called by them *bōr-ro-kay-ra*. With this they hurl small poisoned darts, *bee-rō-tay*. They are wrapped at the but with a fine fibrous floss to make them fit into the tube of the gun.

The poison is stated to be extremely virulent, fatal in a few minutes to any mammal, and without known antidote. It is alleged to be obtained from a small tree toad, by piercing him alive through the back, and then slowly roasting him over a fire, when the poison exudes on his surface. Into this, without further preparation, the sharp ends of the arrows are rubbed, and, when dry, they are ready for use.

Although the Andaguedas have been placed in the Choco linguistic stock by various writers, and by myself in my work on the linguistic classification of the American race,* this has been on the reports of local residents, no specimen of their dialect having been printed. The brief list which I now publish has, therefore, a value of its own; and the greater, as recent researches tend to place the Choco stock in a much more prominent position in South American linguistics than had been heretofore surmised. Its apparent affinities with several of the languages of northwestern Brazil, and the close proximity of the tribes speaking it to the isthmus of Panama and the northern continent, promise that a thorough analysis of its words and forms will throw new light on the prehistoric migrations between North and South America.

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* *The American Race: A Linguistic Classification and Ethnographic Description of the Native Tribes of North and South America*, p. 176 (New York, 1891)

COMPARATIVE VOCABULARY OF THE ANDAGUEDA DIALECT OF THE CHOCO STOCK.

Man,	*mo-hu-nah.*	Tado,	*umujina.*
Woman,	*mway-răh.*	Chami,	*uera.*
Sun,	*em-way-tow.*	Chami,	*umata.*
Moon,	*hey-day'-co*	Sambo,	*jedeco.*
Fire,	*tu-be-chu' ah.*	Chami,	*tibushia.*
Water,	*pun-e'-ah.*	Tado,	*panea.*
Head,	*bōr-ro.*	Chami,	*boro.*
Eye,	*tow.*	Chami,	*tao.*
Ear,	*coo rue*	Chami,	*guru*
Mouth,	*ee*	Sambo,	*ii*
Nose,	*cooñ*	Sambo,	*cung.*
Tongue,	*he-rem'-mee.*	Sambo,	*quirame.*
Tooth,	*hu'-dah.*	Chami,	*guida.*
Hand,	*hōō ăh.*	Sambo,	*jua.*
Foot,	*hun-u-ha.*	Tado,	*jinuga.*
House,	*tay.*	Tado,	*tee*
One,	*ab-bah'.*	All dialects,	*aba.*
Two,	*oh-may.*	"	*ome.*
Three,	*em-pay-ah.*	"	*ompea.*
Four,	*hu-mah'-ru.*	"	*quimari.*
Five,	*hoo-wah-sum-mah.*	"	*guasoma.*
Ten,	*du eh-sah.*		
Twenty,	*wan-tsab-bah.*		

In Mr. Granger's vocabulary the letters and syllables are assigned their usual sounds as in English, the *ow* as in "now," the *oo* as in "tool," etc. In the words introduced for comparison, the Spanish sounds must be assigned to the letters.

It is obvious that the dialect is a pure Choco, especially close to the Chami and Sambo forms of the tongue.

The Matagalpan Linguistic Stock of Central America.

By Daniel G. Brinton, M D.

(*Read before the American Philosophical Society, December 6, 1895.*)

Geographical.—A peculiar native idiom prevails—or fifty years ago did prevail—among the aboriginal population of that portion of the State of Nicaragua where are situated the city of Matagalpa and the towns of San Ramon, Muymuy, Sébaco and others in the department of Matagalpa; and in the towns of Telpaneca, Palacaguina, Yalaguina, Condega, Tologalpa, Somato Grande and others of the department of Segovia. That at one time it extended into the former department of Chontales is proved by the numerous geographical names which remain and by the traditions of those who yet speak it.

The people who use this idiom seem to have had no collective name of their own. They have been called by the Spanish writers, and by others who have followed them, "Chontales" and "Popolucas." It is now fully recognized by competent ethnographers that these terms have not, and never did have, any ethnic significance. They are borrowed from the Nahuatl language (spoken by the Aztecs and others), in which they are common nouns, *chontalli* meaning a rude, rustic person; *popolocatl*, a stranger or foreigner. Many different tribes, who did not speak Nahuatl, were so called both in Mexico and Central America.

Mr. E. G. Squier, in his description of the tribes and languages of Nicaragua, gives the location of a tribe of "Chontales," and adds a short vocabulary of their language,[*] which enables us to assign them without hesitation to the Ulvan linguistic stock, one widely different from which I present in this paper.

In the later work by Don Pablo Levy on Nicaragua, the author informs us that the Chontales spoke Maya and were descendants of the Phœnicians.[†]

In the *Correspondensblatt der deutschen Anthropologischen Gesellschaft*, for September, 1874, is an article based on the researches of Dr. Carl Hermann Berendt, which distinctly repudiates the use of the term Chontal in an ethnic sense, and states that the Chontales and Popolucas at Nicaragua speak various tongues, having nothing else in common than that they are not Aztec, and, therefore, all were called by the Aztecs foreign and barbarous. The article further mentions that Dr Berendt had succeeded in obtaining a vocabulary of the "Chontales of Matagalpa," and reported that, while he found in it various words identical with those in neighboring tongues, he saw no reason to believe it related to any of them.[*] The number of natives speaking it he estimated at 10,000 or 12,000.

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[*] Squier, *Nicaragua, Its People, Scenery, Monuments*, Vol 1, p. 314 (New York, 1856).

[†] *Notas sobre la República de Nicaragua*, pp. 7, 208 (Paris, 1873).

Dr. Berendt never published any portion of this material, and after his death it came into my possession I found it to consist of a vocabulary of ninety-four words and a few phrases furnished by the Rev. Victor Noguera, a priest ordained in 1853, and who had partially learned the tongue while curate at Matagalpa and San Jorge shortly after that date.

I studied it sufficiently to be persuaded that Dr. Berendt was probably right in considering it a tongue without genealogical relations to its neighbors, though deeply indebted to them lexicographically. These neighbors, I may here say, were the Nahuatl or Aztec on the south, the Lencan to the west, the Ulvan to the north and the Moscan or Musquito to the east Other stocks are not far off, as the Chortis of Honduras speaking a Maya dialect, the Xicaques in the same State, and the Mangues in Nicaragua.

In accordance with this view, in my linguistic classification of the American race, published in 1891, I placed it as a separate stock, giving it the name of "Matagalpan." To illustrate its character, I inserted a vocabulary of sixteen nouns and the first five numerals.[†] Previous to this, in the Appendix to an article published in the *Compte rendu* of the Congrès International des Americanistes of 1890, concerning the true meaning of the names Chontales and Popolucas and a specification of the diverse tribes included under them, I inserted a portion of Noguera's list.[‡]

Knowing the somewhat uncertain source of the material, and having no other authority with which to compare it, I deemed it insufficient for a special study. I am glad to say that now that difficulty has been removed, and I am able to present an enlarged and corrected vocabulary and a brief grammatic analysis of the tongue.

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[*] "Doch giebt dasselbe keinen Anhaltspunkt für Schlüsse auf Verwandtschaft mit anderen Sprachen."

[†] D. G. Brinton, *The American Race: A Linguistic Classification and Ethnographical Description of the Native Tribes of North and South America*, pp. 149, 342 (New York, 1891).

[‡] *Congrès International des Americanistes, Compte-Rendu de la VIII Session*, pp. 556-562.

The material for this is supplied by an article from an intelligent instructor, Don Jeremias Mendoza, of Yoloaiquin, published in the journal *La Universidad*, at San Salvador, Central America, in June last (1895). The discovery was to me unexpected, as Mendoza's article is descriptive of the Indian town of Cacaopera, which lies in the Sierra of San Salvador, a hundred and fifty miles from Matagalpa; nor does he express any knowledge that the dialect of this mountain hamlet is identical with that of much of the native population of the departments of Matagalpa and Segovia in Nicaragua.

The village of Cacaopera is in the department of Morazan, sixteen kilometers from its capital, and is noteworthy for the tenacity with which its inhabitants have preserved the purity of their blood and also their ancient customs, usages and language. They have always occupied the locality, so far as written history goes. According to their own traditions, their ancestors before the conquest occupied a site about three kilometers to the west of the present village. At that spot an enclosure about one square kilometer in area is still visible, within which are mounds and ruins of ancient edifices. The ground is rich in fragments of pottery, some bearing "hieroglyphs" and painted figures upon their surfaces; and fragments of carved stones have also been exhumed. This spot is known as the "pueblo viejo," old town.

These facts are important, both as showing the long occupancy of the region by these people and as evidence of the grade of culture they attained.

They number now about three thousand souls, most of whom are engaged in the cultivation of the maguey and the manufacture of ropes and cords from its fibres. These they color, and with them make hammocks, harness, halters, nets and the like, which are highly esteemed by their neighbors.

They are industrious and temperate, all good Catholics, of course, but mingling with the rites of the Church many strange elements from their ancient cult, as dances and masked dramatic performances.

PHONETICS.

The sounds of the tongue appear to offer little difficulty to a Spanish student. The words furnished by Mendoza are written according to the Spanish alphabet, the only point he notes being that the *t* and the *k* should be pronounced forcibly.

The words from Noguera are in the phonetic system devised by Dr. Berendt, which, as far as practicable, follows the Spanish values

CONCEPT OF NUMBER.

As in most American languages, the idea of plurality is not expressed unless the content would be insufficient to convey it Noguera gives : *Libra buyo*, two pounds. When expressed, it is by the suffix *guálkara*, as *guapueguálkara*, hats. This apparently means, "hats, many." The same construction is in the Musquito.

This suffix appears as an infix in pluralizing the pronouns ; as

Sing., *caraji*, he. Plur., *cara-gualcara-ji*, they.

In an abbreviated form in the second person, *e. g.* :

Sing , *maniji*, thou. Plur., *mani-gual-ji*, you.

And probably still further incorporated in the first person :

Sing , *yamiji*, I. Plur., *yam-ta-ca-ji*, we.

As will be shown later, the plural of verbs is based on these pronominal forms

The notion of exclusive and inclusive plural, or of the dual number, does not appear.

CONCEPT OF GENDER.

There seem to exist but few independent words denoting sex. Even for "father" and "mother," the same term, *amis*, is employed (hence ="parent").

Where it is necessary to define the gender, the words, *apu*, male, and *mayrro*, female, are added, *e. g.*, *piyu-apu*, cock ; *piyu-mayrro*, hen. The latter is almost certainly the Musquito, *mairin*, which has precisely the same grammatical use and significance,* and is a compound of the feminine *yorra*, with a prefix denoting "human."

PRONOUNS.

The personal pronouns are :

I, *yami* or *yamiji*.	We, *yamtacaji*.
Thou, *maniji*.	You, *manigualgi*.
He, *caraji*.	They, *caragual-caraji*.

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* Lucien Adam, *Langue Mosquito*, p. 12 (Paris, 1891).

The possessives are:

Mine,	*áyki*; or, *kikara*.
Thine,	*áyma*; or, *makara*.
His or other's,	*áyni*

In construction, the possessive pronoun of the second form follows the thing possessed; as:

My hat,	*guapue kikará*.
Thy dish,	*barrán makará*.
Thy hair.	*kili makará*.

In the abbreviated forms, *ke*, my, *ma*, thy, they are postfixed to the nouns, forming, in connection with names of parts of the body, etc., inseparables; as is generally the case in American languages.

The personal pronouns have considerable similarity to those of the Musquito language, which are: *yang*, I, *man*, thou. This resemblance extends also to the possessives, Mus., *lupi-ki*, son mine (my son); *mitam* (= *mita-m*), hand thy (thy hand, etc.) (Adam, *Langue Mosquito*, pp. 16–18).

The identity is so striking that it would induce me to claim a relationship between the two tongues, especially as they have certainly many other words in common, but as I have elsewhere pointed out, the personal pronouns and their derivations belong to a class of words which must be excluded from linguistic comparison for ethnographic purposes.*

The demonstratives are:

This,	*iraji*.
That,	*maniji*.

The second of these, it will be observed, is identical with the second person singular of the personal pronoun "thou."

Another demonstrative, which has sometimes the sense of a definite article is *múkare*. It is appended to names borrowed from the Spanish, as, drawers (Span. *calzones*), *kalsoma múkare*; but is not confined to these, as the name of the cotton tree is *man dapan múkare*.

The suffix *bas* appears to be another demonstrative of a similar character, as, *yorrabas*, the girl.

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* See *Proceedings* of the American Oriental Society, March, 1891. I have there shown that there is an extensive physiological correlation between the sounds of many words and the concepts they denote, so that similarities or identities are almost sure to present themselves in stocks wholly disconnected.

NUMERALS.

The numerals, as given by the two authorities, are as follows:

	MENDOZA.	NOGUERA.
1,	*tíbas,*	*bas.*
2,	*burro,*	*buyo.*
3,	*guadbá,*	*guatba.*
4,	*botarro,*	*bota'jio.*
5,	*panacás,*	

These have some affinities with the Ulvan, but also such differences as to prevent us from supposing that they are identical.

CARDINAL POINTS.

These are expressed by phrases in this manner:

North, *huin sal-náka ;*	literally,	"Wind, whence it comes."
South, *mari-kat ;*	"	"Sea, where it is."
East, *lan sal-náka ;*	"	"Sun, whence it comes."
West, *lan-kannáanka ;*	"	"Sun, where it goes down."

The word *mari* in the term for south is doubtless Spanish, these mountaineers probably in their ancient isolation being ignorant of the ocean.

CONSTRUCTION.

The subject precedes the verb and often stands in apposition to a pronoun, as:

Lan	*caraji*	*kánnaba,*
Sun,	he	goes down.

i. e., "The sun is going down."

The object may either precede or follow the verb.

I am hungry (tengo hambre),	*Sepá dainale* (N).
Shall we cut maguey?	*Guano sirru catjali?*
I make a hammock,	*Yamiji tati parri.*
Take a seat,	*Anda kulkans* (N).
The girl held a dish in her hand,	*Yorrabas dainale barrambas pánacam.*

The last word, *panacam*, should probably be analyzed as *pana-ca-m*, "hand-in-her," where postposition and possessive pronoun are incorporated with the noun.

Mendoza gives the following verse, composed by a native youth of Cacaopera. I add an interlinear translation of such words as are clear:

Uppí	*iraji*	*yálaka*
Field	this	beautiful

Guásirri *gualírat* *butatáguali.*
Birds many sing.
Yorra *nananquis* *datsale*
A girl is there
Káka *tukat* *enquis* *culaniquiyu.*
die.

Translation (*of Mendoza*).
In this beautiful field,
Where the little birds sing,
There lives a young girl,
For whom I am dying.

VERBS.

According to the examples given, the general formula of the verb is:

Separable pronoun + verbal theme + temporal index + inseparable pronominal suffix + numerical index.

The last mentioned is required in the plural only.

The uniform personal inseparables are:

SINGULAR	PLURAL
1.—*i*, *im*.	1.—*áca*.
2 —*am*.	2 —*ámbira*.
3.—*a*.	3.—*águali*.

These are derived from the separable personals by the processes of suffixation and elision; and the latter has been carried to such an extent that the original meaning of the suffix has been lost, and the separable personals are now prefixed. This is precisely the process of which we have so many examples in the Romance languages, and is one common to inflectional speech everywhere, if, indeed, it is not the origin of it.

The temporal indices are:

Present.—*i*.
First past.—*teal* (or, *tea*).
Second past.—*l*.
Future.—*jal* (*jam*, *ja*, or *j*).

These are subject to various euphonic changes, and are to be explained as infixes denoting time suffixed to the verbal theme and worn down to their lowest phonetic expression.

Substantive Verb.

As usual, in these tongues, we find no true substantive verb.

Maniji	*yalaca*	*ayou*	*caridi.*
Thou	beautiful	moon	like.

i. e., "Thou art beautiful as the moon."

But "to be in a place" (Span. *estar*) is expressed by the verb *datiali*. "I shall be," *dajimi*; "you will be," *dajamámbira*.

INTERROGATIVES.

Specimens of these are:

How do you do? (N.)	*bátsigüa bayamani?*
Shall we go to the woods?	*guano yurra?*
Shall we go to the river?	*guano yelka?*
Shall we go to cut maguey?	*guano sirrú oáijali?*
Shall we go to bring water?	*guano li yei ájali?*
Do you want to work?	*natánji tiquitguanán?*

NEGATIVES.

The separable term for negative is *guaca*, no; but special negative forms appear to be employed in verbs, as:

To wish,	*nati.*
I do not wish,	*naquisanca.*
I did not wish,	*natiala.*

These are not clear.

PARADIGMS.

To have (Sp. *tener*), *dainati.*

PRESENT.

SINGULAR.	PLURAL.
I have, *y. dáinati.*	We have, *y. dainatáca.*
Thou hast, *m. dáinatam.*	You have, *m. dainatambira.*
He has, *o. dáinata.*	They have, *o. dainaláguali.*

PAST.

I had, *y. dainatecáli.*	We had, *y. dainatecáca.*
Thou hadst, *m. dainatecálam.*	You had, *m. dainatealámbira.*
He had, *o. dainatecála.*	They had, *o. dainatealáguali.*

FUTURE.

I shall have, *y. danajim.*	We shall have, *y. danajamdaca.*
Thou wilt have, *m. dainajáman.*	You will have, *m. dainajamambira.*
He will have, *o. dainajáli.*	They will have, *o dainajáguali.*

To weep, *gualeajali.*

Weeping, *guáleata*; To have wept, *gualeanenala.*

PRESENT.

SINGULAR	PLURAL
1, *guálvati*	1, *gualvatáca*
2, *guálvatam.*	2, *gualvatámbira*
3, *guálvata.*	3, *gualvatáguali*

FIRST PAST.

1, *gualvateáli.*	1, *gualvateáca.*
2, *gualvateálam.*	2, *gualvatealámbira.*
3. *gualvateála*	3, *gualvateálaguali*

SECOND PAST

1, *guálvali*	1, *gualvaláca.*
2, *gualvalám.*	2, *gualvalambira.*
3, *guálvala.*	3, *gualvalaguali.*

FIRST FUTURE.

1, *gualvajím*	1, *gualvajaldáca.*
2, *gualvajámam.*	2, *gualvajamámbira.*
3, *gualvajáli.*	3, *gualvajáguali*

SECOND FUTURE.

1, *gualvanememti.*	1. *gualvanemtáca*
2, *gualvanemementam.*	2, *gualvanemntábira.*
3, *gualvanenala.*	3, *gualvanentáguali*

IMPERATIVE.

Weep thou, *gualva manyji*	Weep ye, *gualvatambira manigualji*
Let him weep, *gualva caryji.*	Let them weep, *gualvataca caragualcaraji*

In the vocabulary, the words from the list by Noguera are marked with an N. Those not so distinguished are from the article of Mendoza.

VOCABULARY.

Above, *rue.*
Alcalde, *huyá.*
Ant, N. *sukale.*
Anus, N. *yukitu.*
Arm, *panamá;* N. *panake* (*má* = thy; *ke* = my)
Armadillo, *kisu* (Ulva, *kusih*).
Arrow, N. *sista* (Musquito, *trisba*),
Atole, *cáurra.*
Ayote fruit, *igua.*
Bad, *ferácaca* (the root is *fera;* see Good and Ugly).
Barranco, *ousní.*
Basin, *tapit.*
Beans, *páo.*
Beautiful, *yálaca* (root, *yal* or *yala;* see Good and Bad).
Bed, N. *ukraske.*
Before, *tácan.*
Behind, *manacát.*
Below, *batis.*
Belly, N. *puke* (Ulva, *bakio*).
Bench (of wood), N. *kul.*
Bird, *guásirri,* N. *yulo.*

Black, *mulka.*

Bow, N. *juip.*

Brasil wood, *macár.*

Breasts, *taike* (*tat* probably = mother; compare *mamma* in Latin)

Cat, *michí* (a foreign word from Nahuatl)

Chile, *cumá*

Church, *teópan* (a Nahuatl word meaning "sacred place")

Cloud, *amú*

Cock (fowl), *piyú-apu* (see 'Hen,' *apu* must mean "male").

Cold, *tústata.*

Color, *kalortita* (probably from Span "color").

Cotton, *dapan.*

Cunnus (fem), N. *su.*

Dark, *rinnuá*

Day, *lántaca* (from *lán*, sun)

Dead, *cúlam*

Deer, *yán*; N. *yau.*

Dish, *barran.*

Dog, *halu*; N. *sulo* (Ulva, *sulo*; Xicaque, *soyo*; Lenca, *suí*; Musquito, *yul*; Carib, *aule*).

Ear, N. *topalke* (Ulva, *kupake*).

Earth, land, *durrú*; N. *doyu* (comp. Lenca, *lu*; Kiche, *uleu*; Maya, *luum*).

Egg, N. *ki.*

Enclosure, *currál* (Span)

Enough, *yalabesoa*

Eye, *kunhán*; N. *kuñke.*

Eyebrows, N. *nakila.*

Eyelashes, N. *kilike.*

Father (parent?), N. *amiske* (given for both "father" and "mother;" e *ke* is a possessive, the Ulva has *mamaski*, mother, though the nearer relation may be to M. *misa*, man).

Female, *yorra*; N. *yueiya* (Carib, *wiire*; Musquito, *yall*, where the frequent *r* = *l* may appear).

Field, plain, *úppi.*

Fire, *laguáli*; N. *lauale.*

Fireband, N. *jokane.*

Fish. *yál*; N. *yale.*

Fly, *a*; N. *sime.*

Foot, N. *napake.*

Good, *bácaca* (the root is probably *ba* or *bay*; see Bad).

Gourd, *suna*; another kind, N. *gŭiia.*

Green, *sásaca* (Lenca, *seega*, blue).

Hair, *kilima*; N. *kile.*

Hamack, *parri.*

Hand, N. *panake.*

Hat, *guapúe*

Hawk, *assá.*

Head, *guará*; N. *máuke* (two quite different words; *guará* may be allied to Lenca *tohoro*).

Heat, N. *guayuka.*

Hen, *piyú mayrro*; N. *boluko* (the latter is the Ulva, *lukuh*; the terminal *mayrro* = female; see Cock).

Hill, *carrán*; N. *kayan.*

Hillside, *pálca.*

Horse, *darráy*; N. *drêije.*

House, *u*; N *u* (same in Ulva).

How, *caridí.*

Hunger, N. *sepa.*

Iguana, N. *jamai* (Ulva, *kasmah*)

Indian, *dáoí.*

Jar, *tútu.*

Knee, N. *suanke.*

Ladino, *mulcám*

Large, *huilca*; N. *baibaka.*

Leaf, *mántaca* (comp. Tree).

Left, *básaca*

Little (poco), *dânmisa.*

Lizard (garrobo), *átuba.*

Maguey, *sirru.*

Maize, *aymá*; N. *aima* (Lenca, *ama*; Ulva, *kam*).

Male (vir), *misil*; N. *misa* } *Misa*
Man, *ómba*; *talí.* } may
be allied to *amis*, father. The

Xicaque, *homé*; Lenca, *amashe*, seem related. *Talí* is like Ulva *aliam*.
Meat (flesh), *nacat*; N. *bubal* (the former is Nahuatl *nacatl*)
Mezcal, *sírrúka*
Money, N *yapá*.
Moon, *áiou*; N *hasko* (Ulva, *uaigo*).
Mouth, *tamaguá* , N *tauake*
Much, *báybaya*.
Nails (of fingers, etc), N. *susuke*.
Nest (of bird), *uyá*.
Net, N. *guilije*
Night, *irranta*.
No, *guaca*
Nose, *N. namke*.
Old, *uskám*.
Owl, *iskarri*
Palm, *acáguata*.
Penis, N. *naske*.
Person, *yavirra*
Petticoat, *yus* , N. "manta," *yus*.
Pigeon, *ituyu*.
Pine tree, N *ku*.
Pine knot, N *ku* (Nah. *ocotl*).
Pitcher, *inti*.
Plantain, *pa*.
Pot, *sarru* (? Span. *jarro*?); N *seia*.
Rain, N *guas*, *iya* (Ulva and Lenca, *guas* = water).
Red, *lalá* (Lenca, *sheula*).
Ridge pole, *lúbu*.
Right, *áydica*.
River, *yelka*.
Road (path), *lap*.
Shore (bank), *yelka uriaka*.
Small, *chiki*; N *kintæ* (Span ?)
Snail, *soní*.
Sómething, *baybás*.
Soon, *sás*
Spittle, *tahalí*
Storm, *irra*.
Stone, *appa*; N. "piedra de moler" (comp Xicaque, *pas*; Lenca, *tupan* , Musquito, *ualpa*)
Sugar cane, *nanhá*
Sun, *lan*; N *lal*.
Sweet, *yayá*
Tobacco, N *guilin* (Lenca, *gua* , Musquito, *u*)
Tongue, N *tomamke*.
Tooth, N. *ninske* (Lenca, *nigh* or *neé*).
Tortilla, *hin* , N. *taska* (the latter is Nahuatl, *tlaxcatl*).
Tree, *mán*; N. *man*
Turkey buzzard, *kúsma*
Ugly, *fléraba*.
Uncle, N *kúkuke*
Water, *lí*; N *li* (Musquito, *li*, *liu*)
Wax, N *simúla*.
White, *saju* (Lenca, *shogo* , Xicaque, *sa*).
Wind, *huin* (Ulva, *uin*).
Woman, *mairro* (Musquito, *mairen*).
Work, *tiquilguanan*.
Wood, *dáno*.
Woods, *yurra*.
Yellow, *mayá*
Yes, *endo*.
Zapote fruit, *tapá*.

VERBS.

to arrive, *uiánajalí*.
to bathe, *idíguajalí*.
to carry, *yájujalí*.
to come, *ayiájalí*.
to cut, *cátjalí*.
to draw, *yakájalí*.
to drink, *dipajalí*.
to eat, *dúri*
to embrace, *bilúejalí* (an embrace, *biluka*).
to give *mitiaja* (N "give me"), *niquia*.
to go, *dihuánan*; also, *guate*.
to go away, *yaguaiáguali*.

to go down, *kánnaba*
to grind, *gũita*.
to have (tener), *dáinali*.
to join, *naoadúajali*
to kill, *culinájali*.
to kindle, *páytijali*
to laugh, *isnaguale*
to leave, *dastaira*.

to lift up, *upítijali*.
to play, *kitijali*.
to sing, *buta táguali*.
to sleep, *ʒábunajali*.
to take, *sígjali*
to wash, *sácajali*.
to weep, *guálbajali*.
to wish, *nali*

OBSERVATIONS ON THE VOCABULARY.

Man and Woman.—The distinction between *homo*, *vir* and *mas*, seems to be represented respectively by *ómba* or *tali*; *misa* or *misil*, and *apu*. Corresponding both to *femina* and *mulier* are *yorra* and *mayrro*; the former conveying also the notion of youth (*joven*). All these words have numerous similarities in sound to others of the same meaning in the dialects of central and north-western South America, the Choco especially, in which "man" is *ome* or *umu*; "woman" *muera*, etc. Evidently *mayrro* is nothing more than *omba-yorra*, the general word for the human species with the feminine termination. That the *m* sound, in this as in so many other languages, is associated with the human, is to be explained by one of those physiological correlations of articulate speech, which I have discussed elsewhere[*].

Dog and Cat.—The word for "dog" in the Central American dialects seems to be generally from the Nahuatl *chichi*. The following list shows the progressive variations:

Nahuatl,	*chichi*.
Tequistecan,	*sigi*.
South Mayan dialects,	*chi*,*'ts'i* [†]
Lenca,	*sui*, *shui*, *shushu*.
Xicaque,	*soyo*
Ulva,	*sulo*, *suldh*.
Musquito,	*yul*.

If these correspondences show derivation, the knowledge of the dog, along with its name, probably was derived from the Aztecan stock to the north. The pure Mayas had a wholly different word, *pek*.

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[*] In the *Proceedings* of the American Oriental Society for March, 1894.

[†] Cf. Stoll, *Ethnographie der Republik Guatemala*, p. 53.

The word for "cat" in most of the Central American tongues is some modification of the Nahuatl *miston* a diminutive of *mistli*, the term for the jaguar

Maize and Its Products—The word for "maize in several Central American tongues is *aima* and it has been plausibly suggested that it is from the Maya *ixim** The Matagalpan word for atole, *cáurra*, is certainly the Cakchiquel *k'or* for the same There seems little doubt that the knowledge of this food plant extended to this tribe from those of Maya descent

ADDENDUM

Since the above was in type I have received from Dr Carl Sapper, of Guatemala, some words from the dialect of Cacaopera, collected by himself in 1895 I add them for the sake of comparison

Man	*yeuua*	Nose	*nam*
Woman	*yora*	Tongue	*ducam*
Sun	*lsun*	Tooth	*nisci*
Moon	*aicu*	Hand	*pana*
Fire	*lavuile*	Foot	*nlin*
Water	*li*	House	*u*
Head	*guaiana*	One	*dibas*
Eye	*kun*	Two	*burru*
Ear	*dupal*	Three,	*vualpa*
Mouth	*dacarua*	Four	*botarru*

Of these, the word for "man is from the same root as that for woman, those for "mouth' and tongue' are probably variants of those given in the vocabulary, while that for "foot is a wholly different term Dr Sapper adds that at present there is no native word for "five'

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*Consult on this subject the excellent monograph of Dr John W Harshberger Maize a Botanical and Economic Study in Vol 1 of *Contributions from the Botanical Laboratory of the University of Pennsylvania* (Philadelphia 1893) The linguistic evidence is given pp 118 128

The Hypenoid Moths and Allied Groups.

By A. Radcliffe Grote, A.M.

(Read before the American Philosophical Society, December 6, 1895.)

The following paper may be considered as a conclusion to that published by this Society in 1883 upon the Noctuæ of North America. As far as the literature is accessible and material allows, I have considered the European and North American forms, whose relationship is so intimate that stable results can never be obtained from their separate study.

THE AGROTID MOTHS.

Since my paper above alluded to, this group has been catalogued in 1890, 1891, 1893 and 1895. In the Washington catalogue (No. 44), the general sequence of the entire family group is based upon my New York list of 1882, the families Thyatiridæ, Noctuidæ and Brephidæ, as limited by me in 1883, being used. In 1895, I separated the Apatelidæ as a distinct family, based on larval characters, and proposed to designate the main group of the owlet moths by the name Agrotidæ, the term Noctua being preoccupied in the birds. The Thyatiridæ are shown by Dyar to be structurally allied to the Platypterygidæ and Geometridæ, from larval characters, and with this I am agreed. They are therefore removed from this series which now stands Apatelidæ, Agrotidæ, Brephidæ. In my efforts to clear the nomenclature and apply the oldest terms I have endeavored to bring these into conformity with the system employed in general zoölogy. In my *Systema*, August 15, 1895, I have shown that the terms "Macro" and "Micro" apply to certain characteristics, designated by Speyer and Chapman, which we can trace through long series, even Papilio showing "Micro" characteristics, as in the pupal waist. However useful and necessary a study of these characters is in phylogeny, they should be rejected from the nomenclature of taxonomical groups. The terms are generally so little understood that they have been applied quite recently as an index to relative size. I replace the term Microlepidoptera, in a taxonomical sense, by that of Tineides for the superfamily.

There remains here for me to note certain changes in the Agrotinæ since my last list. The genus Harrisimemna Grote turns out, as I expected, to belong to the Apatelidæ, and should be there referred. The genus Raphia, from Dyar's observation on the larva, must be removed from the Apatelidæ to the Hadenini. It seems to be allied to the European Episema, but I have not seen the Spanish species of Raphia, nor compared the American forms with the European genera in question.

The genera Calocampa and Lithomia (Lithomoia) should be referred to the tribe Calocampini Grote, 1890; while the genus Lithophane (= Xylina of authors not Xylena of Hübner Ochsenheimer Treitschke) should be left with the Orthosiini The species referred by me to Oligia Hübner should be placed under Monodes Guen with the type *nucicolor* (*nucicolora*) The species congeneric with the European *Oligia strigilis* of which we have undoubtedly several in North America remain to be separated from the species listed under Helioscota Miana of Stephens is considered synonymous with Oligia and as having the same type For the genus Pyrophila I propose the tribal term Pyrophilini The genus Amphipyra of Ochsenheimer iv 70 1816 contains *tragopoginis tetra livida cinnamomea pyramidea perflua* (*pyramidina*) *spectrum* The first six species are taken by Pyrophila Hübner 1806 (1811) and thus *spectrum* becomes the type This conclusion can only be affected by a rejection of Pyrophila for which I know of no sufficient reason It is about time that subjective opinions preferences were abated in the study of the nomenclature of the Lepidoptera The genus Plusia as given by Ochsenheimer iv 89 1816 contains *deaurata* and eighteen other species including Hübner s type *chrysitis* This author cites Hubner and those who refuse to follow this example are accessory to the alienation of Hubner s literary property Ochsenheimer s genus contains incongruous material I attempt to sort the species of Plusia of authors as follows having mainly European material to examine Plusia Hubn type *chrysitis* also *zosimi chryson aurea aereoides* (*aeroides* Sm in error) *balluca bractea metallica æmula deaurata* Panchrysia Hubn with the type *deaurata* is probably not different Perhaps different but slightly as a group is Chrysaspidia Hübn 1818 with the type *festucæ* also *putnami contexta venusta* (*striatella*) Agrapha Hubn unless the type is *glauca* unknown to me is synonymous with Plusia Then comes Autographa Hübn 1818 with the type *gamma* also *precationis rogationis* (*lyaus*) *pseudogamma iota circumflexa ou fratella mappa gutta V argenteum accentifera* Euchalcia Hübn type *illustris* also *modesta uralensis consona cheiranthi* A decidedly different type is Polychrisia Hübn with the type *moneta*, probably here belong *conchæ* and *C aureum* The American species remain as I have said to be sorted over I indicate only Chrysanympha Grt , with the type *P formosa* Grt The genus Xanthia of Ochsenheimer iv 82 1816 includes *luteago* and sixteen other often dissonant species This author cites Hübner and would apparently include his type under *cerago* Under Cosmia, id 84, Ochsenheimer includes *fulvago* W V Hubn , which is = *paleacea*, as stated also *gilvago abluta trapezina diffinis affinis pyralina* To this genus Ochsenheimer also cites Hübner and includes his type *affinis* It is evident that the species of Xanthia have been greatly confused possibly the similar names relating to some shade of yellow in these autumn moths together with the perfunctory affix has assisted to prevent identification Not without reason have I protested, following Guenée against duplication in specific titles in this group , I just discover that my proposal at one time to take *nictitans* as the type of Apamea, had its origin in a mistake as to the species cited by

Ochsenheimer by this name under Apamea, which is not our common *Gortyna nictitans*, but a species of Oligia. Although Ochsenheimer identifies under Cosmia, the *fulvago* of Hubner, with *paleacea*, there is no necessity here for assuming that the *fulvago* of the Tentamen is really this latter species In the interest of the synonymy I assume the *fulvago* of the Tentamen to refer to the *fulvago* of Linné, the *cerago* of Fabricius, which is given by name as the type of Xanthia.

Tribe Scolecocampini Grote, 1890. To this group, Mr. J B Smith refers the genus Pseudorgyla Harvey, with its type, *cersuta* There can be no objection to this reference, and the genus may follow the genus Eucalyptera, on page 74, of my list of 1895. Apparently allied to Cilla and Amolita, the following may find there place in the same tribe :

Oxycilla, n g. Tibiæ not spinulated ; anterior tibiæ unarmed , front smooth , palpi exceeding the head by about its own length, flattened, obliquely ascending The venation could not be examined , the primaries are wide, not narrow as in Doryodes, the accessory cell is present.

Oxycilla tripla Grt. Pale straw colored, dusted with dark scales on the outer or terminal half of primaries in the female A medium and an outer, wavy, very faint brown line , the first of these is oblique beyond middle of cell, the outer line parallel beyond end of cell, about one-third the distance to the margin Another line half way between this and the margin in female only, of ground color. in male with an inward faint shaded brownish border. Fringe the darkest part of the wing, preceded by faint narrow terminal brown venular dashes. Secondaries shaded with brownish especially outwardly Types in coll Neumœgen, under the name *Rivula tripla* Grote. My studies on the species were interrupted by the state of my health, and I left it with the name attached to the specimens under which it is quoted by Mr J. B Smith, in the Catalogue of 1893 This and the following were among the Arizona material in the collection, and their relation to Rivula, which is also referred here by Mr. Smith, is not ascertained

Zelicodes linearis Grote (Litognatha). The female type was referred by me doubtfully to the Deltoid genus and Mr. J. B Smith rejects it from the group The characters of Zelicodes agree with Oxycilla, till we come to the palpi. These are shorter, scarcely compressed, the terminal joint minute. I am indebted to the kindness of Mr. Harrison G. Dyar for notes on the species which enable me to publish them. The relationship of these small, frail, pale colored forms, which have a superficial resemblance to the Pyralidæ, and Hypeninæ, cannot be fully made out until material is accumulated for dissection. I have described the structure and neuration of our Eastern *Cilla distema* quite fully, as also Amolita (*N Am. Ento.*, I, 99, 100, 1880). It seems to me that we can hardly include Rivula with this type. According to Mr J. B. Smith it "lacks the accessory cell and vein 10 of the primaries arises from the subcostal as in some of the Deltoid genera." The value of the characters of vein 5 of the secondaries has been impeached by Mr. Smith when I used it in correcting his reference of Cerathosia to the Arctiidæ, so it need not detain us here The hind wings of Rivula agree, according to Smith, with the "Trifidæ" Mr Tutt, in his *Stray Notes on the Noctuidæ*, calls the reference of Herrick Schaeffer of Rivula "inexplicable," so it may be dismissed as an example of the fact that neurational characters should not be too literally interpreted But Dr Chapman writes that Rivula is not a Deltoid, and as positively not belonging to the Pseudolpidæ or Nycteolidæ, from which I may say the shape of the wings decidedly removes it Since I am not willing to place it in the same tribe with Cilla, from the details of neuration, it may be separately placed in the new tribe, Rivulini m The relationship of Oxycilla and Cilla to Rivula must be left for future study. I publish the names here as they have been cited in catalogues. All such unpublished names of mine are now exhausted

In a pamphlet, kindly sent me by Mr William Schaus, occurs the mention of a genus "Alibama," which I do not recognize and cannot trace. If it has the same derivation as Alabama Grt, 1875, and is different, then the latter may be called *Kualabama* The species *Orthosia purpurea*, No. 779, is wrongly written *perpura* If *crispa* of Harvey is a variety of this, then it is most certainly worthy of the varietal name I really do not know what varietal names are for, if they are not to be employed as designating forms so distinct in appearance as *crispa*, *specialis* and *gularis*. To lump these under a common title is to ignore a category of facts which our nomenclature was invented to designate The black, suffused specimens of my *Andropolia olorina* from California in the Hy Edwards collection, now in charge of Mr Beutenmuller in the American Museum, Central Park, should bear the label var. *australis* Grt.

On page 69 of the Catalogue, Mr. Smith says: "In the British Museum, Mr. Butler has placed a lightly marked specimen of *turris* Grt, with typical *saucia*, and has published them as identical." There are several other criticisms of Mr Butler's determinations to a similar effect, but I have never seen Mr Butler's papers, and since Mr Smith has apparently corrected these mistakes, so far as the North American species are concerned, they need not be entered upon here. There is only one of these instances in which it is possible Mr Butler is correct, the identity of our North American *Agrotis dollii* with *Agrotis birivia* Hb., from the Alps. I have not compared specimens and the figures of the latter do not recall to me the former. Mr Smith seems to regard *birivia* as the type of Chera, and as this term may have been misapplied by Mr. Butler, I give the genus from the *Verzeichniss*:

CHERA.

1818 (1816–1823). Hubner, *Verzeichniss*, 211. *Serratilinea* (this first species has hairy eyes and is an aberrant Mamestra from the Alps and Siberia), *fugax* (*lucernea*), *renigera* (these three names apply to distinct species of Agrotis from the Alps, Austria, Russia and Hungary, all unnown to me, and whether they belong to the subgenus Carneades, or whether Chera has been restricted to any one of these I cannot say), *templi* (this latter is the type of Dasypolia Guen) There is no mention of *birivia* under Chera.

RHYACIA.

1818 (1816–1822) Hübner, *Verzeichniss*, 210. *Lucipeta birivia* This term has priority over Chera, if the latter is to be restricted to the contents which are Agrotis sp. It seems, on the surface, that Mr. Butler's use of Chera should be changed to Rhyacia, but whether these five species of Agrotis belong to the same subgenus is not certain In no event can *birivia* be the type of Chera. I make no reference of type to either of these names, leaving the matter to those who have the material and the literature I have not examined these gray Alpine species to see if they share the clypeal tubercle of Carneades. As stated by me, there are primarily three structural types in Agrotis 1. Front smooth, fore tibiæ unarmed. 2. Front smooth, all the tibiæ armed. 3 Front tuberculate, all the tibiæ armed (Carneades). I have never doubted, when the clypeus was properly examined, that species belonging to my genus *Carneades* would be found in Europe, but I am the first to detect the character and to insist upon a comparison of all the forms to establish these divisions. There are so many names in Hübner that Carneades can hardly be preserved, it would be almost a miracle. But if it falls I wish to have it distinctly understood that I based my genus upon absolute character, and that Mr. Smith's statement that it was founded in "ignorance" is an incorrect assertion. I distinctly oppose the use of modifications of the genitalia as being of generic importance (of themselves sufficient to support generic titles) in the Agrotidæ for reasons already fully given elsewhere

Finally, with regard to *Fruva obsoleta*, I have recorded it as a variety. It is very distinct from *fasciatella*, being perfectly plain, and Mr. Smith's remarks upon it show that he has made but a superficial examination of my types, Catalogue, 302. On the contrary, I found structural differences between the two in *Can. Ent*, and it seems that we should consider it as a distinct species, unless these observations of mine are properly contradicted. In any case it is an easily recognized form and should have a distinct name.

THE CATOCALINE MOTHS.

As stated by me in 1888 there are, roughly speaking, two distinct types of ornamentation in the geometriform Agrotidæ, or Catocalinæ. In the first, the lines of the primaries are not distinctly continuous over the secondaries, which are thus more or less distinctively marked, as in Euclidia and Catocala; in the Ascalaphini the hind wings have the general color, but the lines of fore wings are usually wanting, this feature fails in *Pleonectyptera pyralis* an aberrant form which has been referred to the Herminilini from the "interesting leg structure figured by Zeller." In the second the lines are continuous, the resemblance to the Geometridæ is marked, not only in the rivulous lines, but in general color, and even contour. At the same time the resemblance between aberrant geometrid moths in the European fauna, such as *mantata* and *plumbaria*, with North American Euclidiini is so striking as to have induced Hubner to figure our species as Geometridæ, this author also refers our *Arctia rubicundaria* to the Geometrid genus Crocota Examples of the second type of ornamentation are Thysania and Pheocyma (= Homoptera). In the Thysaniini the extreme limits in size within the Order is reached; the fore wings are greatly elongated, the body vestiture lies close, the eyes are large, head and palpi well developed, while the large lateral expansion of the wings fit the moths for extended flights. Thysania and Letis are wind-visitors over our territory from intertropical America; Erebus may breed in Texas or Florida, in Arizona and the Southwest. The name of the tribe cannot be taken from Latreille's genus, Erebus, since it becomes in this case a duplication of the title of the diurnal group of which Erebia Dalman is typical. I have arranged the tribes on comparative characters of the moths, but a classification seems also possible upon the prolegs of the larvæ, which vary in number from twelve to sixteen The observation made by me on the larva of Apatela is repeated by Prof Brooks on certain Crustacea, in which "the free prolonged larval life has brought about modifications which have no reference to the life of the adult, so that the larvæ differ among themselves more than the adults do." But the suppression of the prolegs in the Catocallinæ, especially in the Boletobiini, where it reaches its maximum in Boletobia and Aventia, would seem to be of phylogenetic importance The larva of Catocala seems to mimic bark or branchlets, thus like that of the Geometrid genus, Eubyja

Tribe Euclidiini, type *Euclidia glyphica*, "Grass Moths·" Euclidia, Diasteria, Cænurgia, Dysgonia (type *algira*, and here I suspect belong our *smithii* ♂ = *consobrina* ♀, *concolor*), Panula, Agnomonia, Poaphila (type *sylvarum*), Phurys, Parallelia, Phoberia, Celiptera (Litomitus)

Tribe Melipotini, Synedoida (Cissusa may belong to the preceding), Melipotis (Bolina), Hypocala, Litocala, Syneda, Cirrhobolina The genera Hypogramma, Capnodes and Agassizia are unknown to me. A distinction between these two tribes may be difficult.

Tribe Eulepidotini, type *Eulepidotis alabastraria*: Palindia, Eulepidotis.

Tribe Stictopterini · Stictoptera, Magusa.

Tribe Ascalaphini, type *Ascalapha lunaris*: Ascalapha, Strenoloma, Siavana, Panopoda (*rufimargo* and *carneicosta* are not varieties, but distinct species), Fagitana (Pseudolimacodes), Argillophora, Remigia, Pleonectyptera, Antiblemma, Anticarsia.

Tribe Catocalini, type *Catocala fraxini*: Catocala, Andrewsia, Allotria.

Tribe Ophiderini, type *Ophideres materna*: Euparthenos, Ophideres

Tribe Toxocampini, type *Toxocampa ludicra*: Toxocampa, Eutoreuma

Tribe Thysaniini, type *Thysania agrippina:* Thysania, Letis, Erebus.

Tribe Pheocymini, type *Pheocyma lunifera* Zale, Pheocyma, Pseudanthracia, Ypsia, Campometra (Eubolina), Trama, Pericyma, Selenis, Yrias, Homopyralis, Matigramma, Spargaloma

Tribe Pangraptini, type *Pangrapta decoralis* Zethes, Phalænostola, Pangrapta, Sylectra The distinction is based on the superficial character of the angulated wings, Sylectra has a remarkable antennal structure and a vague resemblance to Scoliopteryx, in 1809 Latreille refers it to Herminia.

Tribe Hexerini, type *Hexeris enhydris* the single genus Hexeris, from tropical Florida.

Tribe Boletobiini Boletobia, Aventia, Dyaria, Acherdoa.

A correlation of these tribes with Guenée's families is in part possible, but since I do not regard these groups as of family, or even subfamily value, it is not necessary to attempt it.

THE HYPENOID MOTHS.

This group is classed by me in 1890 as a subfamily of the Agrotidæ under the name Deltoidinæ, a corresponding modification of the previous terms, Deltoides and Deltoidæ of Latreille and Guenée The name Deltoidinæ is objectionable, however apposite, there being no genus of the name from which it could be derived I shall therefore call the group Hypeninæ, from Hypena, the typical genus of a group, which is called by some writers by the English term, "Snout Moths," in allusion to the projecting labial palpi. These pyraliditorm or hypenoid moths form a tolerably compact and very interesting group, from the usual strong expression of secondary sexual characters. In 1890 I divided it into two tribes, Herminiini and Hypenini, and these are here retained, Mr Smith's Heliini the not being sufficiently distinct, since the male character drawn from the first joint of the front feet is analogous to the other modifications of the appendage in the Herminiini The term itself could not be retained in any event, since it is derived from the generic term Helia of Guenée, which is not only a synonym, but preoccupied also.

My conclusions upon a study of the literature of the subfamily Hypeninæ are here given:

POLYPOGON.

1802. Schrank, *Faun., Boica*, ii, 169: *barbalis*, *tentacularis*.

The type must be taken as *barbalis*, although I have thought the contrary opinion tenable; but it seems to follow from Latreille's subsequent action, or rather the accepted interpretation of his action in 1805. I had supposed, recently and from the quotation of 1808 to Herminia in the Washington Catalogue, that Latreille's generally accepted term might really be the earliest in the group. But this is not the case, and Polypogon Schrank is the first. It would, indeed, be better to consider *tentacularis* the type, but see my remarks under Herminia, which explain the confusion between the two species, *barbalis* and *tentacularia* (*tentacularis*) Under this restriction of Polypogon, the later term Erpyzon Hubn , 1806, falls as a synonym.

HERMINIA

1809 Latreille, *Gen. Crus Ins* , Tome iv, 228 "*Herminia barbalis* Latr , *Hist. nat des Crust et des Insectes*, tome xiv, 237 ; *Crambus barbatus* ♂, *Cr. tentacularis* ♀ ; *Herm. rostralis* Latr , *Cr rostratus* Fab , *Herm proboscidalis ; Cr proboscidens, ensatus* Fab —*Phal ericata* Cram., *Cr adspergillus* Bosc , Coq , *Hyblæa sagitta* Fab , *Phal orosia* Cram. *Obs* Antennæ sæpe ciliatæ aut subpectinatæ in uno sexu infra incrassatæ aut in medio dilatatæ uninodosæ "

From this it is only clear, that Latreille considered *barbalis* as the ♂ and *tentacularia* (*tentacularis*) as the ♀ of the same species Also that he did not consider Hypena and several other genera, *i.e.* Sylectra, Hyblæa, etc , as distinct. Only the general reputation of his work (published in Paris) seems to have floated his term Herminia , this has been used later, by Lederer, Staudinger, etc , and good authorities in the sense that *tentacularis* was typical

The original citation for this genus is "Latreille, *Hist Nat d Crust et d. Insectes*, T. xiv, Par an xiii, 1805." This work is not in the library of the university, and I cannot again consult it at the moment. But the citation above, given by Latreille four years later, of his original work, shows that "*barbalis* Latr ," of 1805, is explained to mean "*barbatus* ♂, *tentacularis* ♀ " Mr. Smith gives: 1802 Latr , *Gen. Crust et Ins.*, iii. 418, et iv, 2281." I think this citation must have been copied , Tome iii contains Hymenoptera. It does not then follow that Mr Smith has examined all the works catalogued by him ; although such examination is, as Mr Smith truly says, the basis of good work in any science, as this implies a knowledge of what has been done in the past. But I think that the works not examined by Mr Smith might have been specially marked I do not know where "iii, 418," was obtained , "iv, 2281," seems to be an exaggeration of my citation as above, "iv, 228," and would argue the existence of a rather voluminous work.

Latreille's diagnosis, above given, must lead us to consider either *barbalis* or *tentacularia* as the type of the genus Herminia. I have proposed to take *tentacularia*, because there is no apparent impediment to this course, and it does not disturb the accepted Continental nomenclature. The earlier Polypogon is founded on *barbalis* and *tentacularia* regarded as *distinct* species ; Herminia is founded primarily on *barbalis* and *tentacularia* regarded (incorrectly) as the *same* species. According to this view Erpyzon Hübn., and Pechipogon Lederer, nec Hübner, are synonymous with Polypogon Schrank ; a term which has been unaccountably neglected In the "Revision," Mr. Smith adopts my previously expressed opinion, that *tentacularia* is the type of Herminia. It is clear that the European species must be revised. They fit in everywhere with the American The question is further narrowed by the apparent fact that *barbalis* and *tentacularia* are types and sole species, they stand alone by themselves, none of the species heretofore associated with them having strictly the same structure or combination of characters Were their generic distinction not admitted, the term Polypogon would have to be used for a combined genus, and Herminia be dropped. Should Polypogon be preoccupied, then the combined genera would take the name Herminia, since this is earlier than Erpyzon of Hübner.

ERPYZON.

1806 (1811). Hubner, *Tentamen*, 2. *barbalis*. This is sole species and therefore type

The term, being later than Schrank's or Latreille's, falls before either. It could only be used in the case, that *barbalis* and *tentacularia* being held to belong to distinct genera, Schrank's term for the former proved unavailable.

PARACOLAX.

1816 (1825) Hubner, *Verzeichniss*, 344. *tarsicrinalis* (*barbalis* in error), *tarsiplumalis*, *grisealis*, *devialis*.

This term might have been used instead of Zanclognatha by Lederer, since this author refers *devialis* to Herminia, and includes all the rest in his new term A discussion of the type follows later.

PECHIPOGO.

1816 (1825 ?). Hubner, *Verzeichniss*, 345 *barbalis* (*plumigeralis* in error), *pectitalis*.

This name, altered to Pechipogon, is erroneously used by Lederer and Staudinger for *barbalis*. *Pectitalis*, unknown to me, may be the type.

ÆTHIA.

1816 (1825 ?). Hübner, *Verzeichniss*, 339 : *emortualis*, *circulata*.

For this name *circulata* is type. Guenée takes out *emortualis* as the type of Sophronia, which Speyer wrongly records as a synonym of Æthia.

The following is an attempt to arrange the Palearctic species. Unfortunately I have only part of the European and no American specimens at the moment for study ·

1. Male antennæ thickened or nodose, palpi recurved, fore legs modified and tufted : *Zanclognatha tarsiplumalis*, *tarsipennalis* and the American species.

2. Male antennæ not thickened, palpi recurved, fore legs modified and tufted : *Paracolax grisealis*, *tarsicrenalis*. *Grisealis* may be type.

3. Male antennæ with very short pectinations, palpi in the male bent

upwards in the female extended shorter than in Herminia accessory cell aborted There is apparently only one species *Polypogon barbalis*

4 Male antennæ specialized with long pectinations continuous to base palpi long extended forwards in both sexes terminal joint recurved fore legs untufted There is apparently only one species *Herminia tentacularia*

5 Male antennæ with lengthy pectinations specialized at basal third thence to the base with pectinations obsolete palpi extended forwards or slightly bent *Litognatha absorptalis (nubilifascia) cribrumalis* The genus Sisyrhypena is retained as distinct upon the wing shape pattern and color Pallachira is apparently only different by ornamentation and may be united with Litognatha or retained as distinct as a matter of convenience I do not know *gryphalis* or *crinalis* and cannot make out whether they belong to Chytolita or not

6 Male antennæ not specialized pectinate fore legs tufted palpi extended variable in length *Philometra metonalis eumelusalis dervalis*

HYPENA

1802 Schrank *Fauna Boica* ii 163 *Proboscidalis rostralis palpalis*

1816 (1825?) Hübner *Verzeichniss* 345 *Palpalis decimalis obsitalis rostralis*

1874 Grote *List N Am Noct Bull Buff S N S* 52 Takes *rostralis* as type

I find no objection in literature to this course the date is wrongly given by me in 1874 as 1801 possibly the term is older than Schrank s work but I have not traced it The Californian species are typical Hypena *scandalis* resembles more nearly *obsitalis* The genus as established by Lederer contains incongruous material

BOMOLOCHA

1816 (1825?) Hübner *Verzeichniss* 348 *Crassalis (fontis) antiqualis terriculalis*

Lederer in 1857 uses this term for *fontis* alone which thus becomes type

1874 Grote *List N Am Noct Bull Buff S N S* 51 Designates *crassalis (fontis)* F as type

Hübner s *crassalis* Samml is referred to *obesalis* but as he distinctly quotes Fabricius species which is *fontis* in the *Verzeichniss* the true *crassalis* Fabr becomes type

MACROCHILO

1816 (1825?) Hubner *Verzeichniss* 345 *Tentacularis proboscidalis rusticalis cribralis*

Tentacularis is taken by Polypogon *proboscidalis* (see Grt *List* 1874,

59) possibly belongs to Meghypena, *cribralis* (*cribrumalis*), perhaps, is a Litognatha (see *ante*); there remains *rusticalis* Zutr., 375–6, as type of Macrochilo.

SALIA

1806 (1811). Hubner, *Tentamen*, 2. *Salicalis*, sole species and therefore type.

1875. Grote, *Bull. Buff. Soc Nat. Sci*, II, 228 Uses this generic name for *interpuncta* and refers *salicalis* as the type

1893. Smith, *Cat. Noct*, 384, uses this term for *interpuncta* and *rufa*, and refers to *Verzeichniss*, 339, for the generic term, but this is incorrect, as in the *Verzeichniss* there is no genus of the name; the latter is there employed only in the plural form to designate a Stirps (Salliæ). The following is the *Verzeichniss* name for *salicalis*:

COLOBOCHYLA.

1816 (1825?) Hubner, *Verzeichniss*, 344. *Salicalis*, sole species and therefore type.

The name falls before Salia, it has only been used by Zeller in 1872. It is misprinted Calobochila by Smith (*Cat*, 384) Madopa Stephens is synonymous. Zeller writes Colobochila in correction of Hubner's spelling.

The Hypenoid Moths of North America and Europe are closely related, so much so, that if the American collector found the European species upon his home excursions in the field, they would hardly present him a form unrelated to what he already knew Conversely it is but few genera out of the American fauna which would strike the European collector as "exotic" Perhaps the Southern element in the N. American fauna, genera with a coil of hair on the male antennæ, with sharp apices of primaries, is the strangest, or such odd forms as Palthis, Dercetis, or Eulintneria, which have no analogues in Europe. The mass of forms resemble each other in the two worlds and here again the new is remarkable for its excess in species, as in Bomolocha Representative species occur freely, as *Bomolocha baltimoralis*, *Epizeuxis americalis*, *Salia interpuncta*. The occurrence of distinct species of typical Hypena in California belongs to the same class of facts as the occurrence of Saturnia, and I have offered a probable explanation for this feature of geographical distribution in the order.

Genera should, ideally, contain species of which the evidence is that they are phylogenetically connected in time. When we study the divergence in representative species we are met with the fact that the pattern of ornamentation and then the color have a persistency superior to details of structure, as, for instance, the forms of the *genitalia*. Genera are opinionative to a certain degree; as compared with species they have naturally less fixity. Thus the importance of deciding upon a particular species as the type of the generic title becomes obvious. Without this guide, no approximate uniformity is attainable in our systems of nomenclature As a rule, in selecting generic characters, more stress should be laid on those not prominently affected by special needs in the struggle for existence. Such are more liable to modification, while each modification or variation, working in a given direction and correlated with habit, is temporarily fixed by inheritance. It must be to the working of this law distinctively that species exist Variation may be called forth by natural selection, or by dynamic forces, but only heritable characters can persist. Reversion, as I have said elsewhere, is only inheritance at a distance. When inheritance has rendered permanent for a time a new modification, it does not eradicate all trace of former equally and relatively permanent states in the past history of the organism Given conditions in some way resembling the former, which produced an older modification, then the tendency is to bring the older modification to the surface. It follows from the observations already made, that all the cells are essentially recipient. As long, then, as genera are not based upon characters of phylogeny, they will remain matters of opinion, or again of convenience

In the Hypeninæ there is a tendency in the males to develop extraordinary secondary characters. These are not confined to a single organ, but affect the appendages in general. These structures are partly useful to the insect and adaptive and are rather of specific than generic value. For generic characters should clearly be chosen from those not favoring the idea that they have arisen from a change of habit or from the tendency to produce extraordinary structures in a given direction The usual sexual differences in the moths, pectinated and simple antennæ, here extend to other regions of the body , none the less are they of similar morphological importance. The antennæ are modified in Zanclognatha, Chytolita, Renia, Bleptina; the palpi in Palthis; the wings in Plothypena and Gaberasa. But the most common and extraordinary variations are presented in the structure of the front pair of legs. All these features have been fully described in the late *Revision* by Mr J. B Smith for the American species, and in calling attention to them, the object here is to suggest that their value in uniting species under one genus may be overestimated. Species which present similar ornaments to the anterior legs, but which show other, apparently minor, because less striking differences, in other parts of the body, should not be considered as congeneric of a necessity. The tendency in the group to present exaggerated tuftings on the front legs, or abortion of the front tarsi, may be exhibited along different immediate or generic lines of descent. So, in Sisyrhypena, the peculiar "wing form and color" are quite sufficient to authorize a different genus from Litognatha. In my opinion the strange pattern of Pallachira might allow a separate generic title.

Among the forms which have been incorrectly referred to the present group is *Nycteola revayana* (*undulana*). Dr Chapman writes me, that the egg is very much the same as that of *Pseudoips bicolorana* That is, it is like an Acronycta egg, but flatter and with more numerous ribs. The larva has similar feet to Pseudoips, flat, seal-paddle shape, it is much more active than Pseudoips and makes a web, giving color to the old reference of the moth to the Tortrices. The cocoon and pupa have much resemblance to those of Pseudoips I may add, the shape of the wings and the venation offer peculiar characters. There seems to be little doubt that the moth is not Hypenoid, nor would I consider it an Agrotid at all. In fact I prefer to consider Nycteola neither a Pseudoips nor an Agrotid, but as representing a distinct family, oscillating between the Pseudoipsidæ and Chlamyphoridæ I am inclined to lay some stress on geographical distribution in these matters The Pseudoipsidæ and the Anthroceridæ are peculiar to the Old World, just as the Citheroniidæ and perhaps the Lacosomidæ are exclusively American. But Rivula and Nycteola are clearly descended from the same preglacial fauna with our other N. American representative forms It seems probable that the Pseudoipsidæ in Europe appeared at a different epoch upon the scene of their present distribution and were not included in the preglacial arctic fauna at the time of its disintegration by the first Ice Period

The study which Dyar kindly communicates to me upon *Nycteola undulana* (*revayana*) bears out its relationship to Pseudoips and narrows its claim to be considered a distinct family still more By this in the larva of Nycteola tubercle iv is remote from v, behind the spiracle or nearly so, the subprimary retæ present, a leg plate instead of tubercle vii The larva thus clearly belongs to the superfamily Agrotides The setæ are all single, no secondary ones and the legs are normal. Nycteola is thus restricted to the Agaristidæ, Noctuidæ, Pseudoipsidæ or Ptilodontidæ Some of the Arctians and Lithosians have the warts degenerated to single retæ, but Mr Dyar detects no evidence of degeneration in Nycteola. In the moth the resemblances lie with the Pseudoipsidæ The venation is similar, especially the stalking of veins 3–4, the origin of 8 on hind wings; 6 and 7 from cell on fore wings. I rely on the shape of the wings, the minor differences of neuration, the somewhat different larval habit to sustain the family rank The palpi, very different from Pseudoipsidæ, approach the *Chlamyphoridæ* (*Nolidæ*). It seems likely that the three groups are related, but have separated as long ago as perhaps the Miocene, certainly long before the Ice Period They appear as strange elements when associated now in one "family," and are perhaps best kept apart in our classifications. The genus Sarrothripa of Curtis is a synonym of Nycteola Hübner, 1806 (1811).

In the *Canadian Entomologist*, 158, 1895, I have criticised the methods employed by Mr. J. B. Smith in identifying the "types" of the late Mr. F. Walker in the British Museum. The immediate occasion was the identification of *Acronycta cristifera* of Walker with my *Mamestra lubens*, and I believe my evidence is decisive. Further instances of error are offered by Mr. J. B. Smith in his recently published *Revision*. On page 892 of the *Catalogue*, Mr. J. B. Smith reports the result of the examination of the "type" of *Hypena* (?) *idæusalis* Walker, and positively identifies it with my *H cistata* referring the latter as a synonym On page 108 of the *Revision* Mr Smith says in contradiction In my studies in the British Museum I *found* a specimen which I *took* as the type of *idaeusalis* Walker and which I *considered* the same as *H cistata* Grote and so referred it in my catalogue Mr Butler writes later that this is a mistake and that Walker s species is not even a Hypena The description somewhat bears out Mr Butler s statement and I have apparently made some mistake though how I cannot conceive The italics are mine and render any further comment superfluous since the whole matter proves my assertion that the identifications were made on occasion perhaps generally without reference to the descriptions in the Lists Since Mr Smith admonishes me that Walker s identifications even of his own species are entirely untrustworthy and since Walker s types have no type labels and his peculiar methods of describing have been disclosed by Mr Smith and Mr Butler since finally these types have been shifted by a non specialist in the group and are no longer as Walker left them there is ground for rejecting Mr Smith s identifications supported by the fact that Mr Smith admits two of them in this group to be erroneous But what we need is a working nomenclature and I would not impede the attainment of this result by needless opposition having been one of the earliest working lepidopterists to hold that Walker s badly founded names should be accepted as if properly founded Still we should not *per force* apply his badly founded names merely to rid our lists of unidentified descriptions In referring *Homoptera herminioides* to *æmula* in this subfamily Mr Smith has laid himself open to the charge

I give now my reasons in full for rejecting Hormisa as used by Smith First I copy the description from the B M Lists Hormisa (xvi 74) *Male* Body slender Frontal tuft prominent acute Proboscis very short Palpi long slender compressed slightly pilose obliquely ascending *third joint lanceolate* less than half the length of the body Antennæ *slightly pectinated* about half the length of the body Thorax squamous with *closely applied hairs* Abdomen extending rather beyond the hind wings *Legs slender bare* hind tibiæ with long spurs Wings moderately broad *Fore wings rectangular at tips* rather oblique and hardly convex along the exterior border

From this description it is certain that it absolutely contradicts Litognatha in every essential point given and here italicized by me Litognatha has lengthily pectinated antennæ with specialized nodose processes at basal third The legs in male are not bare but very remarkably tufted in the male which sex Walker describes (see my figure and original description) the last joint of the palpi is not lanceolate the thorax is not clothed with closely applied hairs the fore wings are not rectangular at tips, but pointed But, in each and all of the above statements the diagnosis agrees with *Epizeuxis æmula* or *americalis* and this in *exactly the points in which it contradicts Litognatha* It is certain that Walker drew it up on a specimen of Epizeuxis. It is a rule of zoological nomen clature that a generic title defined by a description cannot be applied to a species which this definition absolutely contradicts I therefore on reason and under the rules reject Hormisa as applied to Litognatha and refer it as a synonym of Epizeuxis I can look with confidence that my action will be sanctioned by lepidopterists both in America and Europe It appears to me without doubt correct since the application of a generic title must not be contradicted by the generic definition

While the generic title Hormisa is thus clearly to be rejected I am inclined to adopt *absorptalis* for the species The description is incomplete and *contradicts nubilifascia* in the denticulated interior line in my species it is wanting usually when present fine and even The reniform cannot be described as brown punctiform it is represented by two black dots merely The descriptions of the lines on secondaries do not agree with *nubilifascia* Agreement is shown in the description of the exterior and submarginal lines on fore wings in the fact that the upper surface is given as paler than under No mention is made of the discal dots It is not impossible that Mr Smith has made some unexplainable mistake arising from a subjective desire to break down my names as in the case of *idaeusalis* But I content myself here with rehabilitating my generic title and I leave the matter of the species to the decision of later writers who will judge the whole case without feeling It seems to me probable that Walker after describing his genus from a specimen of Epizeuxis finally removed this type but not before it was seen by Grote and Robinson in 1867 and that the species *absorptalis* was really described by him under a generic diagnosis previously and disconnectedly drawn up * His persistent use of Hormisa for other species of Epizeuxis would be thus explained In 1867 there was apparently much more mixing of species under one name than now comes out after Mr Butler has sorted† the insects over and Mr Smith has taken them for Walker s types

In 1867 I pointed out the fact to Mr Walker standing with him over the drawers which he was still arranging that in a number of instances he had more than one species under a title and he nervously admitted the fact I was then but a young tyro and my knowledge of our species was slight I had previously sent Mr Walker at least one hundred species for comparison and I have his determinations yet which even at the time in 1863–4 surprised me and set me thinking Walker and Guenèe I believe neither of them furthered the work of American lepidopterists by their descriptional publications

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* Consult the account of Walker s methods of working *Cat* 1893 p 7 This covers the case of Hormisa exactly European lepidopterists would never be agreed to accept a genus founded on *Epizeuxis æmula* for *derivalis*

† See *Cat* p 8 where Mr Butler has marked specimens which he considers as Walker s types

Family Agrotidæ

Family type : *Agrotis segetum*.

Subfamily Hypeninæ Grote, 1895.

Subfamily type : *Hypena rostralis*.
(—Deltoides Latr., Deltoidæ Guen., Deltoidinæ Grt , 1890)

Tribe Herminiini Grote 1890.

Tribal type · *Herminia tentacularis*.
(—Hellini et Herminiini Smith, 1895)

Gen Pseudaglossa Grt., 1874.

Type : *P. lubricalis*

1 *lubricalis* Geyer U. S generally ; Can. to California
phæalis Guen. (Helia)
surrectalis Walk. (Bleptina)
var *occidentalis* Sm.
2 *scobialis* Grt. Canada to Middle States.
3 *denticulalis* Harvey. Canada to Texas.
4. *rotundalis* Walk.
rotundalis Walk. (Hormisa)
borealis Sm. (Helia).
forbesii French (Pseudaglossa).

Gen. Epizeuxis Hübn , 1818 (1825 ?).

Type *E. calcaria*.
(—Hormisa Walk , 1859)
§§ unnamed section

5 *laurentii* Sm. North Carolina.
6 *majoralis* Sm. Middle States.
? *herminioides* Walk (Homoptera).
7 *æmula* Hübn. N. America, east of Rocky Mts.
mollifera Walk. (Microphysa).
effusalis Walk. (Hormisa).
concisa Walk. (Hormisa)

Epizeuxis, typical section.

8. *americalis* Guen. Canada to Texas , New Mexico.
scriptipennis Walk. (Microphysa).

Gen. Zanclognatha Lederer, 1857.

Type : *Z. tarsiplumalis*.
Subgen Megachyta Grote, 1873.
Type : *Z. lituralis*.

9. *lituralis* Hübn. Canada to Florida and Texas.
10. *theralis* Walk. Canada to Southern States ; Arizona.
deceptricalis Zell.
var. *gypsalis* Grt.
11. *inconspicualis* Grt. New York ; Adirondacks.

11½. *minoralis* Sm. New York.
♂ sp præc. ?

Subgen. Cleptomita Grt., 1873.
Type *Z. atrilineella.*

12 *atrilineella* Grt. Texas
13. *lævigata* Grt Canada to Southern States, Dakota.
obsoleta Sm
14 *punctiformis* Sm. District of Columbia.

Subgen Zanclognatha Led.

15 *cruralis* Guen. Canada to Southern States, New Mexico
jacchusalis Walk
16 *obscuripennis* Grt New York to Alabama.
17 *protumnusalis* Walk Canada to Middle States.
minimalis Grt.
18 *marcidilinea* Grt Canada to Southern States.
19. *ochreipennis* Grt. Canada to Southern States.

Gen PITYOLITA Grt., 1873.
Type *P pedipilalis.*

20. *pedipilalis* Guen Canada to Central States

Gen LITOGNATHA Grt., 1873.*
Type. *L nubilifascia.*

21. *absorptalis* Walk Canada to Southern States.
nubilifascia Grt
22 *litophora* Grt New York, Central States

Gen. PALLACHIRA Grt, 1877.
Type : *P bivittata.*

23 *bivittata* Grt. Canada to Central States.

Gen SISYRHYPENA Grt., 1873
Type : *S. pupillaris.*

24 *orciferalis* Walk. Middle States to Texas.
pupillaris Grt. (Sisyrhypena).
hartii French (Pallachira)

Gen. PHILOMETRA Grt., 1872 †
Type . *P. longilabris*

25. *metonalis* Walk. Canada to Virginia.
goasalis Walk.
longilabris Grt.
goasalis Sm.

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* This is — Hormisa Sm. nec Walker The name Litognatha should be used for the genus as extended by Smith, and including the species here kept separate under Pallachira and Sisyrhypena.

† There is a genus "Phyllometra Dup.," which, however, has a different derivation and under the rules my term need not be changed.

26. *eumelusalis* Walk. Canada to Virginia.
serraticornis Grt.

Gen CHYTOLITA Grt., 1873.

Type· *C. morbidalis*

27. *morbidalis* Guen Canada to Virginia
28. *petrealis* Grt Canada to Virginia, Brit. Col, Dakota

Gen. BLEPTINA Guen, 1854.

Type· *B caradrinalis.*

29. *caradrinalis* Guen Canada to Texas; New Mexico.
cloniasalis Walk. (Herminia)
30 *medialis* Sm. "Semi-tropical Florida."
31 *inferior* Grt. Virginia, southwardly.

Gen. TETANOLITA Grt, 1873.

Type: *T lixalis.*

32. *mynesalis* Walk.
var *lixalis* Grt.
33. *floridana* Sm. Florida and Texas.
34. *palligera* Sm.* California.

Gen. RENIA Guen, 1854

Type. *Renia discoloralis.*

35. *salusalis* Walk Canada to Southern States.
brevirostralis Grt.
salusalis Walk (Herminia).
36. *discoloralis* Guen. Canada to Virginia.
fallacialis Walk. (Hypena)
generalis Walk. (Hypena)
thraxalis Walk. (Herminia).
37. *fraternalis* Sm. Southern States
38. *sobrialis* Walk. Canada to Southern States
restrictalis Grt (Renia).
39. *larvalis* Grt. Central and Southern States.
40. *clitosalis* Walk. Canada to Virginia.
centralis Grt (Renia)
41. *factiosalis* Walk. Canada to Virginia.
plenilinealis Grt. (Renia)
var. *alutalis* Grt.
42. *flavipunctalis* Geyer., Canada to Texas
phalerosalis Walk. (Herminia).
heliusalis Walk. (Herminia).
belfragei Grt. (Renia).
pastoralis Grt. (Renia).

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*In the *Bull. Brook. Ent. Soc.*, Vol vii, 6, Mr. Smith states that this species "must be hereafter" referred to Heterogramma but in the *Revision* he refers it to Tetanolita, which I here follow, although he had previously remarked that it was "perfectly congeneric with *Phalaenophana rurigena*."

43. *pulverosalis* Sm. Colorado.

Gen Hypenula Grt., 1876
Type *H opacalis*.

44. *cacuminalis* Walk Southern States.
biferalis Walk. (Herminia).
opacalis Grt. (Hypenula).

Gen. Phalænophana Grt. 1878.
Type. *P rurigena*
= Heterogramma Sm. nec Guen.

45 *pyramusalis* Walk Canada to Texas
gyasalis Walk. (Herminia)
rurigena Grt. (Phalænophana).

Gen. Gaberasa Walk
Type *G ambigualis*
= Eulintneria Grt. 1875.

46 *ambigualis* Walk. Canada to Texas
♂ *bifidalis* Grt.
♀ *indivisalis* Grt.

Gen Palthis Hübn, 1816 (1825?).
Type: *P. angulalis*.
= Clanyma Guen., 1854
= Mardara Walk., 1859.

47. *angulalis* Hübn. Canada to Southern States.
aracinthusalis Walk. (Mardara).

48 *asopialis* Guen. Canada to Southern States.

Gen. Dercetis Grt., 1878.
Type: *D. vitrea*.

49 *vitrea* Grt. Eastern States to Texas; Canada (?)

50 *pygmæa* Grt. Florida and Texas.

Tribe Hypenini Grt., 1890.
Gen. Capis Grt., 1882.[*]

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[*] I refer this genus here, following Mr Smith, but with hesitation. I had regarded the moth as allied in shape of wing to Sisyrhypena. It resembles in ornamentation a very dark *Paracolax grisealis*, in which the lines are lost and only the paler curved terminal marking contrasts I do not consider the absence of secondary sexual characters as excluding the moth from the Herminiini. Mr. Smith states that I gave him a specimen of *S. salicalis* labeled "Texas." I do not recollect having done so. Until I read the statement I was not aware that the European form occurred in North America. In any event I am unwilling that the species should be recorded from Texas on my authority. Mr Smith's statement is incredible to me and surprises me, I kept no list of what I gave him, but I must disclaim any knowledge of the occurrence of *S. salicalis* in North America, having always believed the species to be represented by *S. interpuncta*, as hitherto assumed in all my papers on the subject. The Arizona material, coll. Neumoegen, has the subterminal space shaded with reddish brown, if it does not represent a species, it certainly does a good variety. *No similar variation is noted of S. salicalis.* Mr. Smith's figure, Pl. viii, 4, is misleading, not showing the discal dots of *interpuncta*.

Type : *C. curvata.*

51. *curvata* Grt. Canada to Middle States

Gen SALIA Hubner, 1806 (1811)

Type : *S salicalis.*
= Colobochyla Hübn. 1816 (1825 ?).
= Madopa Stephens, 1827.

52 *interpuncta* Grt Texas , Arizona
saligna Zell.
var. *rufa* Grt.

Gen. BOMOLOCHA Hubn , 1816 (1825 ?).*

Type . *B fontis (crassalis).*
(Group Bomolocha)

53 *manalis* Walk. Canada to Middle States.
54. *bijugalis* Walk. Canada to Texas.
pallialis Zell.
?*fecialis* Grt.
55. *baltimoralis* Guen Canada to Middle States
benignalis Walk.
laciniosa Zell.
56. *scutellaris* Grt. Canada to Middle States ; British Columbia.
57. *abalienalis* Walk. Canada to Middle States
58. *annulalis* Grt. Texas.

(Group Macrhypena)

59 *madefactalis* Guen. Canada to Texas.
♀ *damnosalis* Walk.
achatinalis Zell.
♂ *caducalis* Walk.
profecta Grt.
60 *deceptalis* Walk Canada to Southern States.
♂ *perangulalis* Harvey.
damnosalis Sm., in error, Cat , 893.

(Group Euhypena)

61. *sordidula* Grt. New York to Texas.
62. *toreuta* Grt. New York to Texas.
|| *internalis* Rob.
albisignalis Zell.
63. *umbralis* Sm. "Florida."

(Group Micrhypena)

64. *citata* Grt. New York to Texas.
idausalis Sm , in error, Cat. 893.
trituberalis Zell.

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* The arrangement of the species in the *Revision* by Mr Smith is virtually my own with the generic titles drawn in I retain them here as designating groups, except Meghypena, which Mr Smith says, "may again come to be used" I have never discontinued its use. I suggested that the material in this genus might belong to one species The relationship of *profecta* escaped me.

Gen. Meghypena Grt., 1878

65. *edictalis* Walk Canada to Middle States.
    ♂ *vellifera* Grt.
    ♀ *lentiginosa* Grt.

Gen. Lomanaltes Grt , 1878 *
Type *L lætulus*

66 *eductalis* Walk. Nova Scotia to Texas.
    lætulus Grt.

Gen Hypena Schrank, 1802
Type: *H rostralis.*

67 *californica* Behr Calif., Vancouver , Brit. Col.
68 *modesta* Sm. Los Angeles, Calif
69 *decorata* Sm. California ; Vancouver.
70 *germanalis* Walk
    evanidalis Rob.
    humuli Fitch nec Harris.
    var. *olivacea* Grt. (pale form).
    var *albopunctata* Tep. (dark form).

Gen. Plathypena Grt., 1873

71. *scabra* Fabr.
    humuli Harris
    erectalis Guen.
    var *subrufalis* Grt. (rufous form).

The Reptilian Order Cotylosauria.

By E. D. Cope.

(Read before the American Philosophical Society, November 15, 1895.)

The characters of this order are as follows:

Quadrate bone united by suture with the adjacent elements. Temporal fossa overroofed by the following elements: Postfrontal, postorbital, jugal, supramastoid, supratemporal, quadratojugal. Tabular bone present. Vertebræ amphicœlous; ribs one-headed. Episternum present. Pelvis without obturator foramen

This order is of great importance to the phylogeny of the amniote

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* In the *Bull. Brook. Ent Soc*, Vol. vii, 4, Mr. Smith says of his new Bomolocha that "it is nearest to the *lætulus* variety of *deceptalis*" Nowhere in the *Revision* can I find mention of this remarkable variety of *deceptalis*, pr syn or pr var. I do not know what to make of the omission Now, in the *Revision*, Mr Smith adopts Lomanaltes and says that the insect "does convey a somewhat distinctive impression." As in *Agrotis opipara* and *Oncocnemis riparia*, etc. Mr. Smith's synonymy is here not full, the omitted references tell against me and here cover up a remarkable error of judgment on his part.

Vertebrata. The structure of its temporal roof is essentially that of the stegocephalous Batrachia, while the various postorbital bars of the amniote Vertebrata are explained by reference to the same part of its structure.

The relations of the opisthotic and paroccipital bones in the later orders are apparently explained by their structure in the Cotylosauria. I have identified the element which intervenes between the exoccipital and the supratemporal in the Lacertilia with the distal part of the opisthotico-paroccipital element in the Testudinata, retaining for it the name of paroccipital. Thinking that I have confounded this element with the opisthotic, Baur differs with me,* and calls the element in question the squamosal. My belief in the position taken was based on the character of this region in the Pythonomorpha, where the paroccipital extends proximad to the petrosal, and nearly or quite to the opisthotic, which it does not do in the Lacertilia, a fact not sufficiently regarded by authors generally. I assumed, in consequence of this structure in the Pythonomorpha, that the single element in the Testudinata which extends from the supraoccipital to the quadrate, really includes two elements, the opisthotic proximally and the paroccipital distally. This view is confirmed by the fact that the two elements in the Cotylosauria are distinct. I have been able to locate the semicircular canals definitely in the genera Empedias† and Chilonyx, and to fix the position of the opisthotic, petrosal and epiotic bones. In adults these elements are coössified, but they appear to be separated by suture from the exoccipital and from the paroccipital. The latter is a long bone and supports the quadrate exclusively, the exoccipital being separated by a considerable interval. The form of the quadrate is that characteristic of theromorous Reptilia and Batrachia. It is distal in position and short, not reaching the cranial box by its proximal extremity, with which it is connected by the paroccipital, and by the elements of the temporal roof.

The palatal elements in this order are more or less in contact on the middle line, and the pterygoids diverge abruptly from this point, and return to the quadrate. The occipital condyle is single, and does not include exoccipital elements (unknown in Elginia).

Intercentra are present in Pariasauridæ, Diadectidæ and Pariotichidæ, and they are wanting in Elginiidæ. The hyposphen-hypantrum articulation is present in the Diadectidæ, but is wanting in the Elginiidæ and Pariasauridæ.

The scapular arch is best known in Pariotichidæ, Pariasauridæ‡ and Diadectidæ. In the two former there is a T-shaped sternum, over which are applied the median extremities of the clavicles, and there are a well-developed coracoid and præcoracoid. In Diadectidæ ‖ (probably genus Empedias) the episternum is articulated by suture with the clavicles.

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* *American Naturalist*, 1895, p. 998.

† *Proceeds Amer Philos. Soc.*, 1886, p. 234.

‡ Seeley, *Philos. Trans Roy. Soc London*, 1888, p. 89, 1892, p. 834.

‖ Cope, *Proceeds. Amer. Philos. Soc.*, 1883, p. 635.

In the *Proceedings* of this Society, 1892, p 279, in a paper on "The Phylogeny of the Vertebrata," I wrote as follows. "Moreover, the Pelycosauria and the Procolophonina have the interclavicle, which is an element of membranous origin, while in the Prototheria we have the corresponding cartilage bone, the episternum This element is present in the Permian order of the Cotylosauria, which is nearly related to the Pelycosauria" The examination of the sternal region in Pariotichus has led me to the conclusion that the episternum and interclavicle are present and fused together in that genus, and also to the belief that the episternum is present in the genus Procolophon The structure is generally similar in the two genera, and I think that Seeley is in error in determining the element in question in Procalophon as the interclavicle only * Gegenbaur pointed out in his *Comparative Anatomy* the different, *i e*, membranous origin of the interclavicle of the Lacertilia, but he included it with the episternum under the same name The true episternum is not present in the Lacertilia It is present in the Sauropterygia and Testudinata and probably in all the orders with one postorbital bar, or Synaptosauria, while it is wanting in most or all of the Archosaurian series, and in the Squamata. Whether the element I have referred to in the genus Naosaurus as interclavicle, is that element or the episternum, must remain uncertain until I can see it in place Its edges are thin, as in the interclavicle of the Lacertilia. Of course the reptilian order which is in the line of ancestry of the Mammalia will have an episternum, and not an interclavicle only The Stegocephalia among Batrachia possess an episternum, with, perhaps, an adherent interclavicular layer as in the Testudniata.

Seeley describes four sacral vertebræ in Pariasaurus In Empedias there are but two. The pelvis is without obturator foramen. The humerus has an entepicondylar foramen The tarsal and carpal elements are incompletely known.

There are palatine teeth in Empedias and Pariasaurus, but none in Elginia.

The inferior surface of the cranium is known in Elginia, Pariasaurus, Empedias and Pariotichus, and has been described as to the first three genera by Newton, Seeley and myself. Pariotichus displays generally similar characters. There is a pair of posterior nares, and a pair of zygomatic foramina, but there is no palatine foramen. The palatine elements meet on the middle line, but gape behind. The vomers (prepalatines) are distinct, and are well developed anterior to the palatines. The ectopterygoid is large and has a prominent posterior border I have stated that in Empedias there are teeth on the vomer. Better preserved specimens of Pariotichus show that the teeth are really borne on the edges of the palatines, which are appressed on the median line in the former genus. Similar palatine teeth are present in Pariasaurus, but are wanting in Elginia. Teeth are also present on the posterior edge of the ectoptergoids in

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* *Philos. Transac. Royal Society*, 1889, p. 275, Plate ix, Fig. 9.

Pariasaurus and Pariotichus, but not in Elginia or Empedias. A character of the American genera is the weakness of the attachment of the basioccipital to the sphenoid. The basioccipital is lost from the only known specimen of Elginia, and the sphenoid projects freely below it in Pariasaurus. The roof of the mouth in this order is a good deal like that of the Lacertilia, lacking the palatine foramen.

The order Cotylosauria was defined by me in the *American Naturalist* for 1880, p 304, and in 1889 (October). In 1889 (*Transac of the Roy Soc. London*, p 299), Prof Seeley gave it the name of Pariasauria In my *Syllabus of Lectures on Vertebrate Paleontology* (1891, p. 38), I arranged the group as a suborder of the Theromora In 1892 (*Trans. Amer Philos. Soc*, p 13, Pl. I), I again regarded the Cotylosauria as an order, and described the characters of the skull in three of the genera, and gave figures of them.

Seeley has objected to the reference of the genera Pariasaurus and Empedias to the same order, on the ground that the elements connecting the supraoccipital and the quadrate rest on the occipital elements in the latter, while they are elevated above them in the former This character would not, however, define orders, as both conditions are found in the Lacertilia, but might distinguish families within an order However, Seeley's description and figure of the occipital region in *Pariasaurus bainii*[*] show that the structure only differs from that of the Diadectidæ in the presence of a large foramen between the supraoccipital and exoccipital bones on each side

Seeley has also proposed to include Eryops in this order But Eryops is a true batrachian with two occipital condyles, and a large parasphenoid bone. The dental structure is like that of Actinodon, and the vertebræ are of the rhachitomous type, which is unknown among Reptilia

The known species of the Cotylosauria range in dimensions from that of the South American Caimans (Chilonyx, Pariasaurus sp) to that of the smaller Lacertilia, *e g*, *Eumeces quinquelineatus* (Isodectes and Pariotichus sp.). They range from the Permian to the Trias, inclusive, and have been found in South Africa, North America and Scotland.

This order embraces at present four families, which are distinguished as follows:

I. Teeth in a single series.

Teeth not transversely expanded; vertebral centra with surfaces only ossified; no hyposphen.......... .. ..*Elginidæ.*

Teeth not transversely expanded; vertebral centra ossified, no hyposphen..*Pariasauridæ.*

Teeth with the crowns transverse to the axis of the jaws, vertebræ ossified and with a hyposphen-hypantrum articulation.......*Diadectidæ*

II. Teeth in more than one series in (one or) both jaws

Teeth with cylindric roots; vertebræ ossified ....*Pariotichidæ.*

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[*] *Philos. Trans. Roy. Soc.*, 1892, p. 326, Pl. 18, Fig 2.

These families embrace the following genera

ELGINIIDÆ

This family includes but one genus Elginia Newton

ELGINIA Newton

Philos Trans Roy Soc London 1893 p 489

Supraoccipital and tabular bones well developed on the superior surface of the cranium the latter produced into a horn Teeth pleurodont crowns distinct from shafts compressed serrate Posterior nares anterior Pterygoids divergent (Newton)

The above characters are derived from Prof Newton s description and figures His epiotic bone is my tabular and his squamosal is my supramastoid It is probable that the superior border of the orbit is formed by the frontal bone which separates the postfrontals from the prefrontals The skeleton is unknown Newton refers this genus to the Pariasauria

ELGINIA MIRABILIS Newton *loc cit* p 478 Pl 37–40

Elgin sandstones (Lower Trias?) Scotland

PARIASAURIDÆ

Three genera are probably referable to this family which differ as follows

Teeth on the vomer and palatine bones vertebræ shallowly biconcave	*Pariasaurus* Seeley
Vertebræ deeply biconcave	*Anthodon* Owen
Palate toothless ? vertebræ	*Tapinocephalus* Seeley

The above characters I derive chiefly from Seeley

PARIASAURUS Seeley

Philos Trans Roy Soc London 1888 p 93 Owen Nomen Nudum *Foss Rept S Africa Brit Mus* 1876 p 6

PARIASAURUS SERRIDENS Owen *Foss Reptilia South Africa Brit Mus* 1876 p 6 Pls vi vii viii Figs 1 2 Seeley *Trans Roy Soc London* 1888 p 75 Pl xvi

Permo Trias of South Africa

PARIASAURUS BOMBIDENS Owen *l c* p 9 Pl viii Fig 3 Pls ix x xii Seeley *Philos Trans Roy Soc* 1888 p 59 Pls xii xiii xiv xv *l c* 1892 p 315 Pl xx

Permo Trias of South Africa

PARIASAURUS BAINII Seeley *Philos Trans Roy Soc London* 1892 p 323 Pls xvii xviii xix

Permo Trias of South Africa

PARIASAURUS RUSSOUVII Seeley, *loc. cit.*, 1892, p. 333, Pl xix, Figs. 3, 4.
Permo Trias of South Africa.

PARIASAURUS MINOR Seeley, *loc. cit*, p 334, 1892, Figs. 10, 11. *Propappus minor* Seeley.
Permo-Trias of South Africa

ANTHODON Owen.

Catal. Foss. Reptiles South Africa Brit. Mus., 1876, p 14. Seeley, *Philos. Trans Roy. Soc.*, 1888, p 95.

ANTHODON SERRARIUS Owen, *loc. cit*, p. 14, Pl xiii.
Permo-Trias of South Africa.

TAPINOCEPHALUS Seeley.

Philos Trans Roy. Soc, 1888, p. 95, Owen, *Catal. Foss Reptilia South Africa Brit. Mus*, 1876, p. 1, Nomen Nudum

TAPINOCEPHALUS ATHERSTONII Owen, *loc. cit.* Pls I, II, Figs 1-8
Permo-Trias of South Africa.

DIADECTIDÆ.

Cope, *Proceeds Amer. Philos. Soc.*, 1880, p. 6, *l. c*, 1882, p. 448.

There are three genera of this family known, as follows
Teeth much compressed, a canine. .... *Diadectes* Cope.
Teeth less compressed, robust, no canine, os tabulare not produced, top of head without dermal scuta . . ..*Empedias* Cope.
Teeth compressed, with an apex; no canine, os tabulare produced into a tuberosity or horn; top of head scutate. .... *Chilonyx* Cope.

The species of this family are of robust character, and have stout limbs with strong claws The spines of the vertebræ are short and robust, and the peculiar hyposphen-hypantrum articulation, elsewhere known only in the Camarasauridæ of the Jura, is present. Intercentra present so far as known.

DIADECTES Cope.

Proceeds. Amer. Philos Soc., 1878, p. 505, 1880, p. 6.

DIADECTES SIDEROPELICUS Cope, *l. c.*
Permian of Texas.

EMPEDIAS Cope.

Proceeds. Amer. Philos. Soc., 1883, p 684. *Empedocles*, *l. c*, 1878, p. 516; *American Naturalist*, 1878, April; *l. c.* April, 1880 (preoccupied).

EMPEDIAS MOLARIS, *l. c.*, 1883, p. 634. *Empedocles molaris*, *l. c.*, 1880, p 10 *Diadectes molaris* Cope, *American Naturalist*, 1878, p. 565.

Permian of Texas.

EMPEDIAS FISSUS Cope, *Proceeds. Amer Philos. Soc*, 1883, p. 634.

Permian of Texas.

EMPEDIAS PHASEOLINUS Cope, *l. c.*, 1883, p. 635. *Diadectes phaseolinus* Cope, *loc cit.*, 1879, p. 9.

Permian of Texas

EMPEDIAS LATIBUCCATUS Cope, *loc. cit.*, 1883, p. 634. *Diadectes latibuccatus* Cope, *loc. cit*, 1878, p 505.

Permian of Texas.

CHILONYX Cope

Proceeds. Amer. Philos Soc, 1883, p. 631; *Trans Amer. Philos. Soc.*, 1892, p 13.

CHILONYX RAPIDENS Cope, *l c*; *l. c.*, Pl. I, Fig. 2; Pl. viii, Fig. 6.

Permian of Texas

PARIOTICHIDÆ

This family was proposed by me in the *Proceeds Amer. Philos. Soc*, 1883, p 631. I there enumerated three genera, one of which must be canceled. To the two remaining, I now add three others. They are defined as follows:

I External nostrils lateral

a. Palatal and splenial teeth with compressed crowns.

Teeth equal, acute ....*Isodectes* Cope.

Teeth increasing gradually in length anteriorly.......*Captorhinus* Cope.

Teeth enlarged on the middle of the maxillary and anterior part of the incisive series ....*Pariotichus* Cope.

aa. Palatal and splenial teeth obtuse, forming a grinding pavement.

Median maxillary and anterior incisor teeth enlarged .....*Pantylus* Cope.

II. External nostrils inferior.

Mouth posterior in position, mandible short, and with a few acute teeth. *Hypopnous* Cope.

It is probable that Helodectes Cope pertains to this family.

ISODECTES Cope, gen. nov.

ISODECTES MEGALOPS Cope. *Pariotichus megalops* Cope, *Proceeds. Amer. Philos. Soc.*, 1883, p. 630; *Trans. Amer. Philos. Soc.*, 1892, p. 25, Pl. I, Fig. 3.

Permian formation of Texas.

CAPTORHINUS Cope, gen nov.

CAPTORHINUS ANGUSTICEPS, sp nov.

This species is represented by an imperfect skull with both rami of the lower jaw in place. The superior osseous walls have been mostly lost, leaving a cast of this region, the walls of the maxillary and mandible, and one side of the temporal region, with the border of one orbit remain. Almost the entire dental series of both sides is displayed, the teeth being split through their centres.

The head is wedge shaped, with an acuminate and rather elongate muzzle. The orbits are round and very large, the diameter being double the interorbital width, and equal to the length of the muzzle to the middle of the nostril. The teeth increase in length gradually from behind forwards, and the anterior mandibular teeth are inclined forwards at an angle of 45°. The premaxillary teeth have lost their crowns, but from the direction of the alveolæ, it appears that they were not directed posteriorly to any conspicuous degree The posterior teeth of both jaws have obtuse crowns, and the crowns become more and more conic to the front. Nothing can be said of the character of the sculpture, as the surface of the bone, where present, is injured. The characters which distinguish the species as compared with other Pariotichidæ, besides those of the teeth, are the following: The interorbital width is less, the orbit large, entering the temporal length 1 5 times; and the skull is narrowed posteriorly, the width being three-quarters of the length, as in the *Pariotichus aguti*.

Measurements.	MM
Total length of skull	62
Width of skull posteriorly	41
Interorbital width	10
Diameter of orbit	16
Elevation of crown of a posterior superior tooth	2 5
" " " an anterior " "	4
Length of posterior inferior tooth	3
" " anterior " "	5
Depth of cranium at occiput	14
" " mandibular ramus below temporal roof	10

From the Permian formation of Texas.

PARIOTICHUS Cope.

Proceeds. Amer. Philos. Soc, 1878, p. 508; *l. c.*, 1883, p. 631. *Ectocynodon* Cope, *l. c.*, 1878, p. 509.

This genus was established on the smallest known species, the *P. brachyops* Cope, in which the premaxillary teeth are unknown. The maxillary teeth display the enlarged median tooth characteristic of the species referred to Ectocynodon, although it is less prominent than in some of the latter, and it is probable that the premaxillaries display corresponding enlargement. The type of Ectocynodon (*E ordinatus* Cope) is in the same condition as regards teeth of the premaxillary series, but a long tooth is present near the mandibular symphysis, so that the characters are so far those of the other species referred here. The elongation of the maxillary tooth is more conspicuous than in the *P. brachyops*. In general this tooth is not absolutely very large, but the teeth anterior and posterior to it are small or very small

Besides the usual series of teeth on the maxillary bone, there are two or more series adjacent. In like manner on the mandible, besides the dentary series, there are two or three series, perhaps on the splenial bone, standing on a ledge in the same horizontal plane as the tooth bearing edge of the dentary

In this genus, and probably in all the members of the family, the palate is roofed over posteriorly by the palatine bones. The pterygoids diverge early from the presphenoid region towards the zygomatic border, as in Batrachia generally. The mandibular articular surface consists of two cotyli placed transversely. The os tabulare is small, and is situated, as in other genera of the family, near the posterior junction of the supramastoid and supratemporal. The supraoccipital *forms* a narrow strip at the posterior border of the superior plane of the skull. The arrangement of the cranial bones is as I have described in the genera Isodectes and Pantylus,* except that the prefrontal and postfrontal bones scarcely meet over the orbit, instead of separating the orbital border from the frontal. The occipital condyle, as in Empedias, is prominent, and has a median fossa.

In *Pariotichus aguti* the vomers are elongate posteriorly and the palatines send an acute anterior process between them. The palatines are separated by a fissure which is narrow anteriorly and becomes wider posteriorly. Each interior border bears on its posterior two-thirds a row of small teeth. In this respect this genus differs from Empedias, where the palatines are closely appressed on the middle line. The suture between the palatines and the ectopterygoid is not easily made out, but this region descends below the maxillaries to opposite the middle of the inside of the mandible as in many Lacertilia. Just anterior to the oblique angle which marks this descent a ridge of the palatines extends forwards and outwards, and for a short distance bears a row of teeth. These teeth, like those of the internal palatine series, are in a single row, differing in this respect from the species of Pariasaurus as described by Seeley, where they are in two rows. The positions of the rows are the same in the two genera. The posterior border of the (?) ectopterygoid supports a patch of teeth in several rows. They are much less developed in Pariasaurus.

The pterygoids are slender and diverge from the interior part of the palatines outward, backward and upward, to the inner side of the quadrate. They bear no teeth The sphenoid is deeply grooved on the middle line as in Elginia. Its lateral inferior keels project below the plane

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***Trans. Amer. Philos. Soc.*, 1892, p. 14, Pl. I.

of the short basioccipital. There is no evidence that any of the rows of teeth of the upper jaw rise from the palatine bone, they appear to be maxillary in attachment

The specimen of *Pariotichus aguti* on which the above observations are made, possesses, attached to the skull in nearly normal relation, seven vertebræ, a good deal of the scapular arch, and the right humerus The fifth and sixth vertebræ have slender cervical ribs. The bodies of these with that of the seventh are the only ones whose inferior surfaces are exposed. I observe narrow spaces for intercentra between them Of the scapular arch the clavicle and a median element are preserved. The former has a narrow subvertical portion which rests on the anterior edge of the scapula, and a horizontal portion which is considerably expanded, contracting gradually to the middle line The median element is T shaped, with the median portion or stem rather slender It is broken off posteriorly so that its apex cannot be described. It underruns the expanded clavicles, and may be therefore supposed to be a cartilage bone and a true sternum, and not an interclavicle. A superficial layer of the exposed part of this element is roughened by sculpture, and probably represents the interclavicle. The inferior layer of the expanded part of the clavicle is similarly sculptured. The humerus has greatly expanded extremities and a slender shaft of moderate length The form is similar to that of Pariasaurus. There is an angulation of the distal extremity, which represents a condyle. Entepicondylar foramen well developed, no ectepicondylar foramen.

The species differ as follows:

I The long maxillary tooth below the anterior border of the orbit.
Head short, wide, orbit small, half interorbital width, length of skull about 25 mm .. . . *P brachyops.*
II. The long maxillary tooth nearer the nostril than the orbit
a. Sculpture reticulate.
Interorbital and parietal sculpture reticulate, interorbital width 20 mm; interior jaw teeth with round crowns.. ....*P. incisivus.*
aa. Sculpture more or less in longitudinal ridges.
Interorbital sculpture in longitudinal ridges, interorbital width 9 mm, equal orbit; maxillary tusk abruptly longer. ...... *P ordinatus*
Cranial sculpture in longitudinal ridges, orbit about equal interorbital width; skull equilateral, straight posteriorly, length 73 mm. Inner jaw teeth compressed...... . ... *P isolomus.*
Cranial sculpture partly reticulate, especially medially, orbit about equal interorbital width, width of skull three quarters length; outline emarginate posteriorly, length 80 mm. .... *P aguti.*
Orbit oval; cranium 162 mm. long, and nearly as wide, posterior border emarginate, muzzle much contracted, entirely overhanging symphysis mandibuli...*P. hamatus*

Pariotichus brachyops Cope, *Proceeds. Amer. Philos. Soc.*, 1878, p. 508.

The typical specimen is the only one that has come under my observation Permian bed of Texas

Pariotichus incisivus Cope. *Ectocynodon incisivus* Cope, *Trans. Amer. Philos Soc*, 1886, p. 290, Pl. II, Figs 4, 5.

But one specimen has come under my observation ; it was found in the Permian of Texas.

Pariotichus ordinatus Cope. *Ectocynodon ordinatus* Cope, *Proceeds. Amer. Philos Soc*, 1878, p 509.

The original specimen from the Permian of Texas is the only one that I have seen.

Pariotichus isolomus Cope, sp. nov.

Three nearly complete skulls represent this species in my collection. In the most damaged of these the frontal and parietal bones are wanting ; in another the skull is fractured so as to separate the maxillary and mandibular bones on one side so as to display the crowns of the teeth.

As may be seen by the comparative key, this species is most nearly allied to the *P aguti*. The form of the skull is different and also the sculpture. The skull is equilateral, and the posterior superior border is nearly straight. The muzzle projects beyond the mouth border, so that the incisor teeth are directed backwards at an angle of 45°. The nares are separated by a space equal to their long diameter. The orbit is of moderate size. Its anteroposterior diameter enters the lengths of the skull anterior and posterior to it 1 75 times, being midway of the total length. It exceeds by a little the interorbital width The mandibular ramus is robust, being a little deeper than wide, and the angle is small and pinched, projecting behind the articulation and in line with the rising inferior border. The parietal foramen is well developed.

In the sculpture of the superior surface of the skull the longitudinal striæ are more prominent than the transverse ones which connect them, except on the muzzle, where they are about equally conspicuous. The sculpture is finer and reticulate on the jugal and quadratojugal regions. About a dozen longitudinal ridges between the orbits. Sculpture of mandible tubercular reticulate.

Three teeth on each premaxillary bone, of graded lengths, the anterior being much the larger. Posterior to these one or even two smaller teeth may stand on the premaxillary. The large tooth of the maxillary is the third from the premaxillary suture. At the fifth tooth the second longitudinal row appears, and at the eighth tooth, the third. There are ten teeth in line with the row which is external anteriorly, but posteriorly a short row appears external to this one, which includes five teeth. The crowns of the teeth of the two internal rows are low and compressed so as to have a longitudinal edge. In the lower jaw there are three rows with compressed crowns, besides the external row. Posteriorly the marginal, and the third row (from without) disappear, and the second and fourth approximate, and end in a single tooth in line with the second row.

In one of the specimens the cranial roof posterior to the orbits can be lifted off. Above the sphenoid region, viewed from above, there are four subround tuberosities, which look like the casts of cavities. On the inferior side of the roof in the corresponding positions are four flat tuberosities, of somewhat different form from the inferior ones, and an obtuse median prominence, which fits into the space between the four inferior tuberosities. These superior tuberosities resemble the casts of cavities left by the dissolution of two hemispheres, and two transversely expanded larger, mesencephalic lobes, with a hypophysis between them. This interpretation is, however, very uncertain, especially as the structure does not resemble the cast of the cranial cavity which I have previously described in Empedias.

Measurements.		MM.
Length of cranium on middle line		76
Width of cranium posteriorly		63
Anteroposterior diameter of orbit		16
Interorbital width		13
Width between nares at front of muzzle		9
Diameter of largest maxillary tooth		2.5
Length of long premaxillary tooth		7
Diameters mandibular ramus at fourth tooth	vertical	10.5
	transverse	9

From the Permian of Texas.

PARIOTICHUS AGUTI. *Ectocynodon aguti* Cope, *Proceeds. Amer. Philos. Soc.*, 1882, p. 451, Pl. vii.

Since this species was described, I have received six crania from the same horizon. These include some specimens of smaller dimensions than the type, while others are intermediate, and one is a little longer. They all agree in their wedge shaped form with less posterior width than the *P. isolomus*, since it is only three-fourths the length. The posterior border is openly emarginate posteriorly, while it is nearly straight in the *P. isolomus*. The cranium has a less depressed form, especially posteriorly. In one specimen, which is much flattened by pressure, the proportion of width to length remains unchanged. In the sculpture, the longitudinal lines are not relatively so conspicuous. The reticulation is conspicuous on the middle parts of the superior surface throughout, and on the sides posteriorly. The sculpture is very fine on the jugal bone and the sides of the muzzle. There are four teeth on the premaxillary, and fifteen in the external series of the maxillary, of which in some specimens the third from the front is the largest, in others the fourth. The crowns of the teeth of the internal series are compressed so as to be anteroposterior The proportions of the premaxillaries and of the internal and external rows of those of the jaws are as in the *P isolomus*

The protrusion of the muzzle, and position of the nostrils, also the size of the orbits and interorbital width are as in *P. isolomus*. The length of the largest specimen is 90 mm., of the smallest 70 mm.

The vomers are decurved anteriorly The posterior border of the posterior nares is opposite the anterior border of the orbits The point of divergence of the posterior or ectopterygoid wings of the palatines is opposite the posterior border of the orbit I count fifteen teeth on each internal palatine border, and five on the external palatine series. The posterior or (?) ectopterygoid patch contains about twenty teeth. All the palatal teeth have circular cross sections.

The clavicles do not meet on the middle line, but show a portion of the sternum between them The sternum posterior to the clavicles is quite narrow The distal extremity of the humerus is in a plane which has an angle of nearly 90° to that of the head The plane of its narrow inner face is nearly at right angles with the general plane, and it projects beyond the latter distad Condylar border concave; entepicondylar ala large

Measurements	MM
Length of sixth cervical centrum.	5 5
Elevation of neural spine of cervical centrum..	10.2
Length of clavicle, vertical portion	15
" " horizontal portion	13
Width of sternum, at clavicles	24
" " posteriorly.	5
Length of humerus...	83
Width of head of humerus	12
" of distal extremity of humerus.	16
Diameter of shaft of humerus	8 5

PARIOTICHUS HAMATUS, sp. nov., Pl viii, Figs, 1, 2

Represented by a cranium with lower jaw in pretty good preservation, and a second smaller cranium with lower jaw, from which the end of the muzzle is wanting Besides exceeding in size the other species, this one is characterized by the elongation and compression of the muzzle, and by the extent of the projection of the premaxillary region beyond and below the mandibular rami.

The length of the skull a little exceeds its posterior width. The lateral outlines expand rapidly from the anterior borders of the orbits, posteriorly, while from this point anteriorly the lateral outlines of the muzzle converge very gradually. The transverse section of the muzzle is subrectangular, and not a segment of a circle as in other species, the superior face being nearly flat, and the maxillary borders somewhat contracted. This form may however be due to pressure. Opposite the posterior border of the nostril the premaxillary border is steeply decurved, forming a concavity which receives the extremity of the mandible The deflected portion of the premaxillary forms a lobe which projects as far as the continuation of the line of the inferior border of the ramus mandibuli. An open emargination of the border separates it from the corresponding lobe of the opposite side. This may be due to accident The mandible is narrower than the muzzle at the symphysis, it is a little wider than the cranium at the front of the orbit, but is narrower than the cranium posterior to it.

The orbit has an oval outline, with the long axis anteroposterior, which enters the length of the cranium posterior to it twice, and one and three-quarters times the length anterior to it, and a little exceeds the interorbital width The latter is flat. The posterior outline of the skull forms a wide open emargination. The surface of the skull and jaws is so much injured in both specimens as to render it impossible to state the character of the sculpture, if any existed.

The teeth are not well preserved, although where preserved their length can be determined in the limestone matrix The elongate maxillary tooth is placed exactly half way between the borders of the orbit and nostril, which is posterior to its position in the *P. aguti*. The other maxillary teeth are small in comparison with the size of the skull The enlarged anterior premaxillary teeth are not well preserved, and their size is uncertain. In some other specimens of similar size with rounded cross-section of muzzle, these teeth are enlarged as in *P. aguti*.

Measurements.

	MM.
Length of cranium from line connecting posterior borders of quadrates	162
Length of cranium from middle of posterior border	145
Interorbital width	32
Diameters of orbit anteroposterior	36
Diameters of orbit vertical	22
Width of muzzle at posterior border of nares	29
Depth " " " "	21
" of cranium at middle of orbit	85
Length of crown of large maxillary tooth	6
Depth of mandible at middle of orbit	20
Length of mandible on ramus	170

The decurved premaxillary region and the posterior expansion of the skull give this species a certain resemblance to the alligator snapping tortoise, *Macrochelys temminckii*

PANTYLUS Cope.

Bulletin of the U. S. Geol Survey Terre, 1881, p. 79; *Transac Amer Philos. Soc*, 1892, p 14.

PANTYLUS CORDATUS Cope, *l. c*; *l. c.*, Pl. 1, Figs. 4–4a.

Permian formation of Texas; two incomplete crania.

PANTYLUS COICODUS, sp. nov.

An injured anterior half of a cranium represents this species. The right dental series is tolerably well preserved, so that the forms of the dental crowns can be determined. The left dental series is partially preserved The superior surface of the muzzle has been destroyed, so that the forms and positions of the orbits and nares cannot be distinguished.

The right dental series includes eleven teeth, which are of subequal dimensions. The crowns are robust and somewhat swollen at the middle, and with a small median subacute apex The matrix covering the palate is rather hard, and in removing it only three internal teeth were detected. Two of these are near the maxillaries, and just within the last and the penultimate respectively The third is opposite the antepenultimate maxillary and is as far interior to it as the length of the last three maxillaries. This and the posterior palatine teeth are as large as the maxillaries, the other is smaller The crowns have the same form as those of the maxillary series.

This species is of about the dimensions of the *P. cordatus*, but the palatine teeth are less numerous, and less closely placed. The inequality in size of the maxillary teeth characteristic of the *P. cordatus* is not seen in the *P. coicodus*, and the form of the crown, in the two species is distinct. Those of the *P. cordatus* are obtuse, and without the little apex of the new species. In the latter the dental crowns have nearly the form of the seeds of the grass, *Coix lachryma*.

Accompanying the specimen above described is a fragment of apparently a dentary bone, which supports eight teeth and parts of teeth. The crowns stand on shanks which rise above the external parapet of the jaw, but have a deeper attachment on the inner side, being thus partially pleurodont. The crowns are swollen at the base as in the maxillary teeth, but the apices are more produced, being regularly conic. The apices are all lost. These teeth belong to a rather larger animal than the one above described, and perhaps to another species.

Measurements.

		MM.
Length of a series of eleven maxillary teeth		37
Diameters of the crown of a maxillary tooth	longitudinal	4
	transverse	3
Distance from ninth tooth to anterior palatine		6

HYPOPNOUS Cope, gen. nov.

Nostrils on the inferior aspect of the muzzle. Mouth posterior. Teeth few, with compressed crowns. Cranial bones sculptured. Frontal bone bounding the orbit above.

This genus displays in this family the character found in Lepidosternum and other genera among the Amphisbænidæ. The large superiorly placed orbits and inferior posterior mouth indicate that the animal lived in some locality where upward vision was important, while its food was below it.

HYPOPNOUS SQUALICEPS, sp. nov , Pl viii, Figs. 3-5.

Based on a skull, which is somewhat crushed by pressure The bony roof of the anterior part of the muzzle has been lost. The suspicion that physical causes could have produced the extraordinary form of the muzzle is dispelled by the symmetry of all the parts, and the preservation of the much abbreviated right mandibular ramus, which is perfect except the angle, with its teeth.

The cranium is moderately elongate, is truncate posteriorly, and has a rather broadly rounded muzzle. The orbits are posterior to the middle transverse line of the skull, and have the axis directed at an angle of 45° to the horizontal plane of the skull The anterior border of the mouth is below the anterior border of the orbit. The nares are large, their anterior border coincides with the border of the muzzle, and they are about as wide as long, the width equaling that of the premaxillary space between them The mouth border is 1 33 times their long diameter posterior to them. The diameter of the orbit is one half the long diameter of the muzzle, and enters its width one and one-half times, it equals the length of the cranium posterior to it, and is twice the interorbital width Both ossa quadrata are preserved, they are directed outwards at an angle of about 45°. Their articular surfaces are concave transversely and plane anteroposteriorly, the anterior border is concave, the posterior convex.

At the anterior extremity of the mandible there is a series of three teeth, which are relatively large, since their length exceeds the depth of the ramus. Their shanks are cylindric, and the apices conic The last two are opposed by two teeth of the upper jaw, and behind these is a third. These are well under the border of the skull, and it is likely that they belong to the palatine bone, although this is not demonstrable Posterior to the three mandibular teeth are two others, but it is uncertain whether they are mandibular or palatine teeth. The crowns of the last two anterior palatine teeth are compressed, as in the species of Pariotichus.

The surface of the cranial bones is sculptured in a shallow honeycomb pattern, the longitudinal ridges predominating on the median regions posteriorly. These bones with those of the mandible are rather abundantly marked with deeply impressed puncta, which may be in some instances pores. These are larger and more numerous on the malar bone, where the sculpture is wanting. They are more sparse on the mandible, and become larger anteriorly. The surface of the ramus is marked also with shallow, generally longitudinal grooves, which sometimes inosculate, and sometimes terminate in the punctiform pits. The inferior bones of the muzzle are sculptured like those of the interorbital region

A series of five crushed vertebræ lie along the inner side the left mandibular ramus, displaying only their neural arches. They are about as wide as long, excepting the anterior one, which is longer. The zygapophyses are well developed, and there extends from about the middle of the side of the neurapophysis an aliform crest downwards and forwards to the side of the anterior articular face of the centrum below the prezyg apophysis The neural arch forms a low roof and judging from the base the neural spine is not large The small size of the vertebræ renders it highly probable that they belong to another individual which the animal had taken into its mouth

Measurements	MM
Total length cranium above	55
Width cranium posteriorly	34
at middle of muzzle	28
interorbital space	9
Length from end of muzzle to mouth border	21
mouth border to quadrate cotylus	30
Depth of mandibular ramus at symphysis	2
middle	3 5
*Anteroposterior diameter of nostril	8
Width of internarial space	5
Length of basis of three mandibular teeth	4
Length of crown of second mandibular tooth	3
three anterior vertebræ	7
anterior vertebra	2 5
Width of	2 5

From the Permian bed of Texas

SUPPLEMENT

SOME NEW BATRACHIA FROM THE PERMIAN BED OF TEXAS

ZATRACHYS MICROPHTHALMUS sp nov

Represented by an entire skull covered with a thin layer of bean ore and a second and larger skull without lower jaw and with the extremity of the muzzle broken off The second specimen displays the characters of the base of the skull and in other respects better displays the specific characters

The attenuation of the bones of the skull exhibited by the *Z serratus* is present in this species also The interorbital and preinterorbital regions are strongly concave and there are strong preorbital fossæ The tabular angles are very prominent forming rudimentary horns and there is a prominent angle projecting from the posterior quadrate region What especially characterizes this species is the small size of the orbits These are about half the diameter of those of a *Z serratus* of the same size and are half the diameter of the space between their posterior border and that of the cranium at the middle line and enter the interorbital width 2 5 times The posterior border of the orbit marks the fourth fifth of the length from the end of the muzzle to the middle supraoccipital border The muzzle narrows rapidly anteriorly presenting an elliptic outline and is much depressed

The parasphenoid bone widens anteriorly so that the pterygoid foramina are triangular with the base posterior and the apex anterior. At the extremities of the transverse processes of the parasphenoid the pterygoids send a prominent border downwards; they then curve rather abruptly outwards to the quadrates. The teeth have not been fully exposed, but on the middle of the length of the maxillary bones they are small and widely spaced.

Dimensions.

No. 1.	MM.
Total length on middle line	100
Width at orbits	84
No. 2.	
Width at orbits	96
" between extremities of quadrates	130
" " tabular horns	21
" " orbits	27
Length from orbit to extremity of tabulare	40

It is uncertain whether there is a process at the inner side of the tabulare as in *Z serratus*. The region of the occipital condyle is without projection and is like that of other species of the genus.

ZATRACHYS CONCHIGERUS, sp nov.

This ganocephalous batrachian is known to me from the posterior part of the cranium of an individual of about the size of the smaller specimen of the species just described. It differs from this and from the *Z serratus* in two conspicuous characters. First, the tabular processes are smaller and more widely separated from each other, second, the border of the quadratojugal element projects freely from the distal part of the quadrate, and is separated from it by an open emargination. The orbits are not so small as in *Z microphthalmus*, have a raised border, and are posteriorly placed. Their diameter is about equal to the space between their posterior border and the tabuloquadrate notch, and is about half the interorbital width. The tabular processes are quite small, and the border connecting them is depressed in the center. The surface is strongly rugose.

The occipital condyles are represented by two shallow cotyli, which are confluent on the middle line. The posterior part of the pterygoid forms a sharp curve inwards before reaching the quadrate, and presents a thin edge inferiorly. The free edge of the quadratojugal is serrate. The muzzle of this specimen is broken off a short distance anterior to the orbits.

Dimensions.	MM.
Width at quadrates	56
" quadratojugals	74
" between orbits	20
" " tabular processes	25
Diameter of orbit	10

TRIMERORHACHIS MESOPS sp nov

The greater part of the skull and vertebral column with ribs and thoracic plates represent this species The vertebral column and ribs rest in a sheet of matrix whose upturned edges suggest that it contains as a support a ventral armature It also looks like a cast of a cavity left in the matrix by the dissolution of the inferior body wall The only part of the vertebræ discernible without further cleaning are the neural arches Limbs not detected The posterior border of the skull is damaged but one angle is preserved and all of the other but the apex The remainder is in good preservation on one side or the other and the surface has been cleaned by weathering The lower jaw is tightly closed on the upper

The skull does not expand posteriorly as in the *T insignis* The posterior border of the orbit is 4 5 times the diameter of the latter in front of the angle of the mandible and four times posterior to the line of the end of the muzzle It is thus nearly in the middle of the length of the skull and posterior to the position it holds in the *T insignis* The interorbital space is nearly twice as wide as the diameter of the orbit while in *T insignis* it equals that diameter The muzzle is therefore relatively elongate and it projects an eye diameter beyond the line connecting the anterior borders of the nostrils The latter are large and look upwards and the long or anteroposterior diameter equals the transverse diameter of the orbit There are no preorbital or interorbital depressions The sculpture is strongly marked On the jaws it is generally longitudinal on the supratemporal radiating on the top of the front and muzzle reticulate with some predominance of the longitudinal ridges The sensory grooves are very obscure but are traceable on the internal border of the nostrils but scarcely posterior to them The groove on the internal side of the inferior border of the mandibular ramus is distinct The rami are more transversely expanded than in the specimens of *T insignis* but some of this may be distortion due to pressure The parasphenoid is narrow for the greater part of the length

The *T bilobatus* is known from the angles of mandibles of two individuals and probably by associated remains The corresponding parts of the *T mesops* are much more expanded transversely inwards are horizontal in fact where the inner wall is in the *T bilobatus* vertical The strong internal keel of the latter if represented at all in the *T mesops* has an external position

The neurapophyses of the vertebræ are more elevated and more delicate than in the *T insignis*, and have the usual median longitudinal groove between them on the middle line above

The thoracic shield is represented by a coarsely sculptured plate which is but partially exposed, so that its form is as yet uncertain.

The species is smaller than the *T insignis*

Measurements	MM
Length of skull to line of mandibular angles ...	186
Width " at " ' "	100

Measurements.	MM.
Length from orbit to end of muzzle (axial)	47
Interorbital width	25
Internareal width	29
Diameter of orbit	12
Width of mandible at quadrate	23
Length of four vertebræ over arches	30

From the Permian of Texas.

DIPLOCAULUS MAGNICORNIS Cope, *Proceeds. Amer. Philos Soc.*, 1882, p 458.

This is an abundant species in the Permian beds in Texas I take advantage of a specimen in which the skull is better preserved than in the type, to describe its segmentation, and also the disposition of the teeth

In the typical specimen the posterior border of the skull was not preserved. The present specimen shows that it is continuous from the extremity of one horn to that of the other, and regularly concave without angles, and that it overhangs the occipital condyles a little The posterior parts of the horns consist of the tabular bones, and the anterior portion consists of the supratemporals. The inferior part of the base of the horn externally consists of the element which articulates with the quadrate, or quadratojugal It is distinguished from the supratemporal by a horizontal suture. A considerable part of its surface presents inferiorly The supramastoid lies between the supratemporal and the postfrontoorbital

The supraoccipitals extend well forwards on the superior face of the cranium, the median suture equaling the length of the parietal bone. They have an extraordinary transverse extent The median suture of the parietals is rather longer, and it is separated by the small parietal foramen at a point one third its length from the frontal suture The posterior width of the frontal is equal to three-fifths its length, and is a little greater than the interorbital width. It extends as far anterior as posterior to the orbits. The posterior suture is trilobate. The postfrontals are suboval with the long diameter at 45° to the median line, and the anterointernal border excavated by the orbit. They do not advance on the internal border of the latter, resembling the prefrontals in this respect. The supramastoids are necessarily well produced forwards to meet the short postfrontals, advancing far anterior to the posterior border of the jugals

The premaxillaries are short and wide, and are widely truncate by the frontal posteriorly. The prefrontals do not extend posteriorly to the inner border of the orbit, but they join the jugal by a considerable suture. The nasals occupy their usual position, and are rather small, one of them is fused with the premaxillary in the specimen The maxillaries are small, especially the facial part, which does not reach the orbit. The jugal is a relatively large bone, and has an irregular posterior outline, where it joins the quadratojugal and the supratemporal

The great expansion of the roof-bones posterior to the quadrates, is associated with a considerable expansion of the pterygoids in the same region. The palatopterygoid arch has the relations prevalent in the Stegocephalia, but what is novel so far, its anterior and chiefly palatine portion carries a single series of teeth on the external and anterior border, which is concentric with the premaxillo maxillary series, as in Cryptobranchus Posterior to this is a pair of straight series of teeth, probably on the vomers, which form an anteriorly directed right-angle at the middle line They do not extend so far posteriorly as do the maxillary teeth, and the latter do not extend so far posteriorly as the pterygopalatines, which terminate at a straight line drawn through the posterior borders of the orbits The posterior nostrils are situated between the two series of palatal teeth The external nostrils open forwards and outwards Maxillary and premaxillary teeth twenty-three on each side Palatines, twenty four, vomerines, ten

The composition of the huge horns is thus the result of the fusion of the three posterolateral roof-elements into one, thus obliterating the notch which separates the tabular from the quadratojugal bones in most other Stegocephalia

DIPLOCAULUS LIMBATUS, sp nov

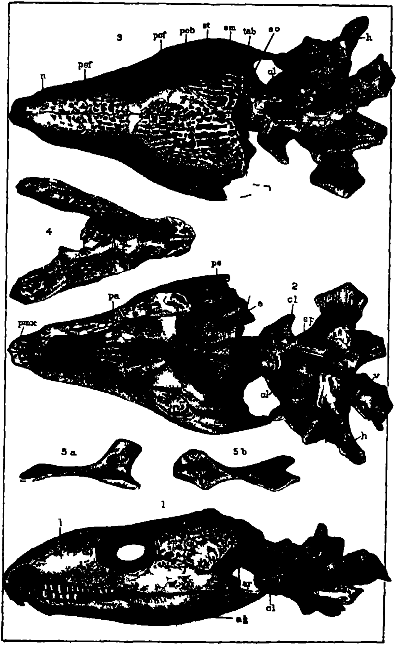
This species is represented by a number of fragmentary skeletons and skulls. One of these I describe as the type since it displays more of the characters than any other, but it is nevertheless damaged anterior to the orbits, so that the form of the muzzle is not accurately determinable.

The character of the species is seen in the horns. These are much less produced relatively to other regions than in the *D. magnicornis*, and the postquadrate (quadratojugal) element is more distinct, and terminates in a separate apex below the principal horn This tract, which is fused with the principal bone in the *D magnicornis*, is separated from it by a groove in the *D limbatus*, and the large fossa which it encloses with the inferior side of the principal horn looks inwards at an angle of 45°, while it looks downwards in the *D magnicornis*. The terminal angle of the quadratojugal (postquadrate) body forms a prominent compressed offset, rather than a free apex. In one specimen of large size it is infero lateral; in the type, entirely inferior. The principal horn is shorter and narrower than in the *D. magnicornis*, and less divaricate.

As the mandibular rami are in place and their extremities are entire, the length of the muzzle can be inferred. It is relatively longer and less broadly rounded than in the *D. magnicornis*. The surfaces of the skull are sculptured in honeycomb pattern, as in the type species.

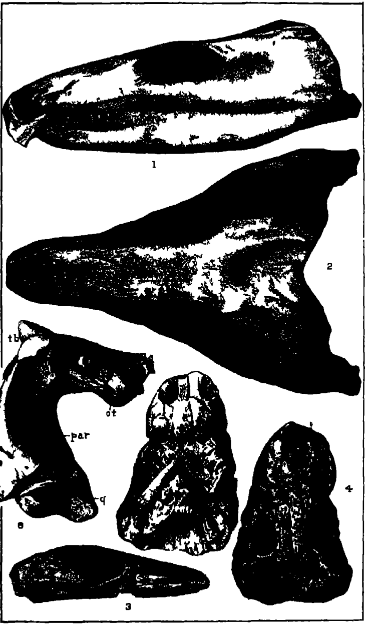
Measurements.	MM.
Length of skull on median line	93
" " to extremity of horn	230
Width of skull at posterior border	160
" base of horn	51
Length from angle of mandible to end of horn	115
" " " postquadrate process	65

PLATE VII



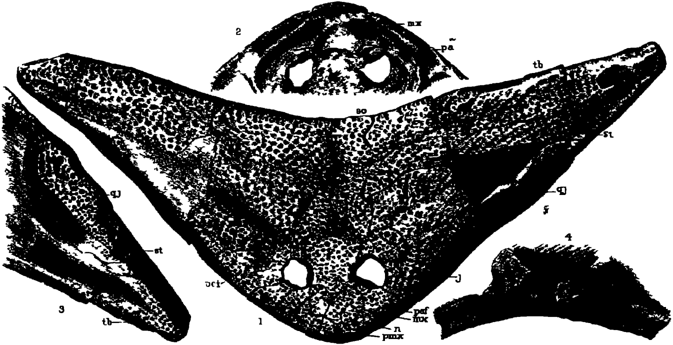
PARIOTICHUS AGUTI COPE

PLATE VIII



1-2 PARIOTICHUS HAMATUS COPE
3 5 HYPOPNOUS SQUALICEPS COPE
6 CHILONYX RAPIDENS COPE

PLATE IX



DIPLOCAULUS MAGNICORNIS COPE

Measurements.	MM.
Length of mandibular ramus...............	82
Interorbital width (approximate)	20

From the Permian bed of Texas.

EXPLANATION OF PLATES.

PLATE VII

Pariotichus aguti Cope, nat. size.

Fig 1 Skull, from side.

Fig 2 Skull, with angular parts of mandible adherent, cervical vertebræ and scapular arch, from below

Fig 3 Skull, from above, with cervical vertebræ.

Fig. 4 Anterior two-thirds of mandibular arch, with adherent premaxillary bones, from above

Fig 5. Humerus.

PLATE VIII

Fig 1. ***Pariotichus hamatus*** Cope, two-fifths nat size, from above

Fig 2 Do from the side.

Fig. 3–5. ***Hypopnous squaliceps*** Cope, skull nat size, 3, from side, 4, from above, 5, from below

Fig. 6. ***Chilonyx rapidens*** Cope, left side of skull from behind and below, one-half nat size

PLATE IX.

Diplocaulus magnicornis Cope, 4-7ths nat size.

Fig 1. Cranium, from above.

Fig. 2. Anterior part of palate

Fig. 3. Postquadrate region, from below.

Fig. 4. Occipital condyles, from below.

LETTERING

N, Nasal bone: ***F.***, Frontal, ***Prf***, Prefrontal; ***Pof***, Postfrontal, ***P.***, Parietal, ***Pmx***, Premaxillary, ***Mx.***, Maxillary, ***J.***, Jugal, ***Qj***, Quadratojugal, ***St***, Supratemporal, ***Sm.***, Supramastoid, ***T***, Tabulare, ***So.***, Supraoccipital, ***V.***, Vomer, ***Pa.***, Palatine, ***Par***, Paroccipital, ***Ecp.***, Ectopterygoid; ***Ot***, Otic bones, ***Asc***, Anterior semicircular canal, ***Pt.***, Pterygoid, ***Q***, Quadrate, ***C***, Clavicle, ***Ep***, Episternum, ***H.***, Humerus, ***Co.***, Coracoid; ***Ic***, Intercentrum

On Some Plistocene Mammalia from Petite Anse, La.

By E. D. Cope

(Read before the American Philosophical Society, November 15, 1895)

The remains of extinct Mammalia from Petite Anse, Louisiana, have been the subject of two brief communications to the Academy of Natural Sciences by Prof Leidy, 1884, p 22, and of a longer one in the *Transactions* of the Wagner Free Institute of Science, 1889, p 33 Mr H C Mercer has published an account of remains of human industry found at the same locality in the *American Naturalist* for 1895, p 393 His remarks are based partly on a letter from Dr Joseph M. Joor, M D, of New Orleans, who made an exploration of the locality in 1890, and furnished a very full report to Mr Mercer The specimens were placed in the Museum of the Tulane University, of New Orleans. Through the kindness of President Johnson, of the University, the specimens were submitted to me, and I give in the following pages the result of my examination Dr Joor reports the occurrence of an Equus and *Mylodon harlanii* (already mentioned by Leidy), and probably some other giant sloths, a small Mastodon and possibly an Elephas I can confirm these determinations of Dr Joor, except as to the Elephas, which I have not seen, and about which the doctor was in doubt.

MYLODON HARLANII Owen.

Of this species the collection contains the following teeth· A complete series of superior molars, all separate, the anterior internal lobe of the third, broken off; the second, fourth and fifth of the superior series of the opposite side, all separate, the first, third and fourth of the inferior series, all separate, separate first and third inferior molars.

The positions of the superior molar teeth have been determined by comparison with the corresponding teeth in place of the *Mylodon renidens* Cope, described below; and with the figures of those of the *M. robustus* Owen, given by Owen,[*] Ameghino[†] and Lydekker[‡] Leidy has already described and figured the inferior molars.[§] In his description Leidy remarks that the superior molars are unknown. I am now able to fill this gap in our knowledge, and to point out some conspicuous characters in which this species differs from the *M. robustus* of Owen. Leidy has described the second superior molar from isolated specimens from Petite Anse, La., and from Missouri, the latter from the type specimens of Harlan's *Orycterotherium missuriensis*,[‖] supposing them to be first upper

[*] *Memoir on Mylodon robustus* Owen, 1842.

[†] *Mamm. Foss. Repub Argent*, 1889.

[‡] *Annales del Museo de la Plata; Paleontologia Argentina*, III, 1894.

[§] *Memoir on the Extinct Sloth Tribe of N. America, Smithson. Contrib. to Knowledge*, 1855.

[‖] *Proceeds Academy Phila.*, 1888, p. 49, Figs. 3-4.

molars He remarks that these teeth differ so much from the first upper molars of the *M robustus*, that it may be necessary to refer the *M harlanii* to a genus distinct from the latter, with Harlan's name Oryoterotherium Since, however, the teeth in question are second molars, the difference is not so conspicuous, and generic distinction is not indicated

The first superior molar is smaller than the others, is more strongly curved, and the section is a wide oval, the inner side much less convex than the external The second molar is curved slightly backwards and also outwards, and has a rather narrowly oval or subreniform section, since there is a median groove on the inner side, which is more conspicuous in one of the teeth referred to this position than in two others. The anterior and posterior faces are regularly rounded, and show no traces of angulation. The dentine is about equally thick all around. The grinding surface is worn into two oblique surfaces, the anterior longer and steeper, for the first inferior molar; the posterior shorter, for the anterior face of the apex of the second lower molar The teeth have very much the form and size of that one described by Leidy as representing his *Megalonyx dissimilis*, but the beveling of the grinding face, and the equal thickness of the dentine on the inner side, show that the species, at least, are distinct

The third superior molar is bilobed on the interior side, the posterior lobe being rather narrow; and the external outline is rather narrowly rounded, and is not truncate. The posteroexternal face is shallowly grooved and concave. The long axis is very oblique to that of the jaw. This tooth in the *M robustus* has the posteroexternal face convex, and the posterointernal lobe is not so narrow; the axis is very oblique. In the *M. renidens* it is more different, having the section reniform with the long axis nearly anteroposterior The fourth superior molar has also a bilobate outline on the internal side, the posterior lobe more produced than the anterior. The crown is quite narrow anteroposteriorly, and the external outline is narrowly truncate. It is represented as rounded in the *M. robustus*. It has a greater anteroposterior diameter in the *M renidens*, and the anterior face is separated from the rounded posteroexternal by an angle. In both of the North American species the groove of the interior face is deeper than is represented to be the case in the *M robustus* The last superior molar is much like that of *M robustus*.

The specific difference which distinguishes the *M. harlanii* most conspicuously from the *M. robustus* is then the form of the second superior molar. This tooth is much larger in the former, and has an elongate subreniform section, while in the *M. robustus* the section is round. The third and fourth superior molars also are rather narrower in anteroposterior diameter in the *M. harlanii*.

It is unnecessary to describe the inferior molars, as this has been already done by Leidy. The resemblance to those of the *M robustus* is quite close.

Measurements of Superior Molars.

		MM.
Diameters of m. i	anteroposterior	20
	transverse	15
Diameters of m ii	longitudinal	33
	anteroposterior	30
	transverse	15
Long (oblique) diameter of m iii		33
" " " " m iv		31
Diameter do at right angles to the longest		17
Diameters of m v	longitudinal	70
	anteroposterior	30
	transverse (longest)	25

Mylodon renidens Cope, sp nov.

This species is founded on a right maxillary bone, which contains all but the first molar tooth. This tooth is represented by an alveolus broken anteriorly, and the free portions of the crowns of the second and third molars are broken off. The crowns of the fourth and fifth molars are perfect. Associated with this specimen are the following, which probably belong to the same species· The posterior three molar teeth of the inferior series; a superior first molar in place in the anterior part of a right maxillary bone.

The superior and inferior series referred to are considerably smaller than the corresponding parts of the *M. harlani*, and might be supposed to have belonged to young individuals. As these animals are, however, monophyodont, it is evident that the only way in which a permanent dentition could be adapted to a growing jaw is by the appearance of but a part of the dentition at a time, or by a conical form of tooth crown, which will permit of the expansion of each tooth at the base. This mode of enlargement does exist for a short time among the Bruta, and this is exhibited in the teeth of the species called Sphenodon by Lund, and *Megalonyx sphenodon* * by myself. The wider base is visible in the inferior series of *Mylodon renidens* in this collection, but the largest dimensions thus obtained are much below those of the *M harlanii.* The superior molars display little if any expansion at the basis of the roots. The crowns of both superior and inferior molars are worn. The presence of a third inferior molar of a species of much larger size, but of the same peculiar character as that of the smaller series, shows that the character is constant and significant.

The typical specimen consists of almost the entire right maxillary bone, with the teeth in place as above described. The alveolus for the first molar indicates that the latter has a subcylindric shaft, curved slightly posteriorly at the extremities. The second molar has a rather narrowly oval section, with a very slight concavity on the inner side, the long axis directed a little inwards anteriorly if truly anteroposteriorly. Dentine equally thick all round. Extremities of section regularly rounded This tooth is like the corresponding one of the *M harlanii*, and with a greater anteroposterior diameter than in the *M. robustus* The third molar is reniform in section, wider anteriorly than posteriorly, the long diameter directed a little outwards anteriorly from strictly longitudinal The posterior lobe is narrower than the anterior measured transversely, and neither lobe is flattened or truncate at any point There are two longitudinal shallow grooves of the shaft, one submedian interior, the other opposite to it, presenting outwards and backwards at an angle of 45° to the axis of the jaw. This tooth is quite different in form from the corresponding one in the *M. robustus* and *M. harlanii*, in its relatively much greater anteroposterior diameter, approaching in this respect the form of the second superior molar.

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* *Proceeds Amer. Philos. Soc.*, 1871, p. 83.

The fourth superior molar has a subtriangular section, the apex external and rounded, and the base internal and bilobate. The posteroexternal face is slightly concave, and the anterior face is flat. Its anteroposterior diameter is relatively greater than in the *M harlanii*, agreeing in this respect with the *M robustus* It is thus evident that the third and fourth superior molars of the *M renidens* are of very different shape, while in the *M robustus* they are much alike. The fifth and last superior molar is much like that of the other two species It is widened anteriorly, and narrowed posteriorly, the anterior long diameter being 45° to that of the jaw A shallow groove of the shaft both externally and internally. The area of the grinding face is less than that of the fourth molar

The infraorbital foramen issues opposite the anterior half of the third superior molar. The anterior border of the zygomatic foramen is opposite the anterior border of the m 5 The palate is roughened with low ridges and tuberosities The difference between its anterior and posterior diameters is not nearly so great as in the *M. robustus*, since the dental series is only slightly divergent forwards from the median palatal suture.

Measurements of Superior Dentition

		MM
Length of maxillary bone on palate		128
Palatal width of maxillary at m. i		35
" " " at m iv		26
Diameters of m. ii	anteroposterior	23
	transverse	11 5
Diameters of m. iii	anteroposterior	21
	transverse at middle	13
Diameters of m. iv	anteroposterior (internal)	15
	transverse (anterior)	15
Diameters of m. v	anteroposterior	16
	transverse (45° to long axis)	14

A fragment from the anterior extremity of the right maxillary bone of another specimen contains the first molar. The bone does not extend anterior to the tooth more than the long diameter of the latter. The premaxillary suture commences in front of the tooth, and not internal to it, as is represented to be the case in the *M. robustus*. The section of the crown is a wide oval, the inner side a little more convex than the outer. Dentine thick and equally so all round Diameters: anteroposterior, 16 mm, transverse, 13 mm The grinding face is nearly horizontal. As it is quite oblique in the *M harlanii*, and on account of the smaller size, I refer this fragment provisionally to the *M renidens*

Three inferior molars, which correspond in size with the *M renidens*, are provisionally referred to it, especially as the third presents characters quite distinct from those of the *M. harlanii*. The first tooth is not preserved. The second is like the corresponding tooth in the two larger species. The section is trilobate, the narrowest and most distinct lobe directed posterointernally, the long axis of the two other lobes, which are less distinct from each other, at 45° with that of the jaw. The grinding surface of the two anterior lobes is directed obliquely forwards, and that of the posterointernal lobe obliquely backwards, for contact with the second and third superior molars

The third inferior molar exhibits externally the outlines of a parallelogram with rounded angles, in its cross section, as in the other species, but the inner extremity is different. The internal border is oblique, and not parallel to the external border, owing to the fact that the anterior internal angle is much exterior in position to the posterior internal angle, from which it is separated by a shallow concavity which presents forwards and inwards, as the section of a groove of the shaft, which is wanting in the two larger species. The anterior and posterior faces present each an open shallow median groove.

The last inferior molar does not differ in form from that of the *M. harlanii* and *M robustus*.

Measurements of Inferior Molars.

		MM.
Diameters of m. ii	longitudinal	46
	anteroposterior, 45°	18
	transverse, 45°	15
Diameters of m. iii	longitudinal	58
	anteroposterior, 45°	11
	transverse, 45°	19
Diameters of m. iv	longitudinal	60
	anteroposterior	26
	transverse.. least	7
	transverse.. greatest, 45°	19

MYLODON SULCIDENS, sp. nov.

This species is represented by a penultimate inferior molar of a species of the size of the *M. harlanii*. Accompanying the remains of the two species are two penultimate superior molars of opposite sides, which I suspect to belong to the *M. sulcidens*, as they differ from the corresponding teeth of the *M. harlanii* in the same way as the penultimate inferior molar.

The penultimate inferior molar resembles closely that of the *M renidens*, but has the dimensions of the *M harlanii*. The internal extremity of the crown is beveled on the posterior border, so that an obtuse ridge characterizes the posterior side of the crown, which is separated from the posterior border of the external face. The latter is subtruncate.

	Dimensions	MM.
Diameters	longitudinal	73
	transverse (oblique)	27
	anteroposterior (in axis of jaw)	20

The penultimate superior molars look as though they belonged to the same individual, they so exactly agree Their long diameter is obliquely transverse to the maxillary bone, and the internal face is deeply grooved as in other species of the genus, the anterior ridge being much less prominent than the posterior. The character which distinguishes the tooth from that of the other species is that the external aspect instead of being regularly rounded is obliquely beveled posteriorly so as to produce an obtuse angle on the posterior side within the posterior margin This is separated from the posterior internal rib by a shallow concavity. When the tooth is held obliquely, as it was in the jaw, the external bevel is parallel with a line connecting the two internal ribs or borders

Diameters of penultimate m. iv	transverse	26
	longest oblique	33
	anteroposterior	16

EQUUS INTERMEDIUS, sp. nov. *Equus major* Leidy, *Transac Wagner Free Inst. Science*, ii, 1889, p 88, (not of Dekay).

Prof. Leidy described and figured as above cited a number of teeth of horses from Petite Anse now in the collection of the United States National Museum He refers them to the *Equus major*. They agree in general with the teeth contained in the collection from Tulane University, and, I think, cannot be identified with that species The collection before me includes a dozen superior molars of adult animals referable to five individuals. Of these, five belong to the maxillary bone of one individual, and two to the opposite side of another individual. There are several superior molars of immature individuals, and numerous inferior molars of adult and young animals, and a few deciduous molars Accompanying these are a symphysis mandibuli, with all the incisors in place, together with a number of loose incisors To these must be added numerous bones from all parts of the skeleton, in good preservation.

The molar teeth are as large as those of the *E major*, and large forms of the common horse. The enamel folds are less complex than those of the former, but are more complex than is usual in the *E. caballus*, though specimens of the latter can be found to match them. They are considerably more complex than in the *E occidentalis* The internal anterior column or protocone is remarkable for its great anteroposterior diameter in the premolars as well as in the true molars although in some of the specimens figured by Leidy (*l c*) those of the p m ii and iii are not so well marked in this respect as those in the specimens now described In the *E occidentalis* while this diameter is large in the true molars it is reduced in the premolars as it is in the *E caballus* When the cementum is wanting on the inferior molars the surface of the dentine is seen to be marked by fine longitudinal grooves

In the symphysis mandibuli preserved the incisors are all present Their crowns all have considerably greater absolute and relative transverse diameters than those of the *E caballus* and the posterior cingulum is present except in the external incisor where no trace of it exists I have not observed this in the horse but the inner wall of the cup is sometimes imperfect in the quagga In the loose incisors preserved which are less worn than those in the symphysis the internal wall of the cup is not so well developed as in *E caballus* and *E occidentalis* Thus in four teeth it is notched at the middle and in two external teeth it has a wide interruption extending to the fundus in one and nearly to the fundus in the other In this respect these teeth approach those of the *E fraternus*

The last superior molar has a greater anteroposterior diameter than usual considerably exceeding that of the penultimate Three such molars display this peculiarity

In the characters of its molar teeth then this species is intermediate between the *E major* and *E occidentalis* and in the character of its incisors it approaches *E fraternus* In order to learn more exactly of its affinities it is necessary to make some comparisons with other portions of the skeleton For this purpose among other parts the occipital region of one individual is available

This region differs from the corresponding part of the *E caballus* and agrees in most respects with that of *E occidentalis* * A transverse crest connects the paroccipital processes and the basisphenoid bounding the precondylar fossa in front so as to convert it into a basin In *E caballus* and *E quagga* this transverse crest does not exist so that the fossa opens directly anteriorly The basisphenoid is not compressed as in *E caballus*, but is wide and robust and the inferior face is marked by a wide median groove I have seen nothing like this in a true horse but the form is that of the *E occidentalis* where however there is no groove There is a longitudinal angle on each side of the sphenoid in the *E occidentalis* which is wanting in *E caballus* but of which a trace may be seen in the *E fraternus* The condylar foramen in *E fraternus* is more anterior than in *E caballus* though this character will probably prove to be less constant than the others mentioned

The *E intermedius* is a shorter nosed [illegible] than the *E caballus* the distance from the anterior lower [illegible] forwards only equaling the corresponding length in the quagga, while the parts are in other respects as large as those of the domestic horse The maxillary bone is produced posteriorly to the last molar as far as in *E caballus*. In *E occidentalis* this distance is less The last superior molar is larger than the penultimate in *E. intermedius*; it is equal or larger in *E. caballus*, while it is smaller in *E occidentalis* * In the *E occidentalis* figured by Leidy (Exct Mamm. Dak. Nebr. Pl. xxi), and in the one figured by me (Ann. Rept Geol. Surv. Tex. 1892), the palatine foramen is opposite the penultimate molar. In the *E intermedius* as in the *E caballus* it is opposite the last molar In the symphysis the mental foramen is entirely anterior to its posterior border, as in *E occidentalis*. This specimen belonged to a mare, as it has no trace of canine tooth, the first time that I have observed this character in an extinct North American horse.

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* *Proceeds Amer Philos Soc* 1884 p 11

The *Equus intermedius* is then intermediate between the *E. occidentalis* and the *E caballus*. It agrees with the latter in its molars and palatine foramen, with the former in the occipital region, wide incisors and short muzzle, and tends towards *E. fraternus* in the incisor cups. From *E major* it differs in the much less complex enamel folds.

Measurements		MM.
Length of last five superior molars		143
" " true molars		86
Diameters of p. m. ii	anteroposterior	30
	transverse	31
Diameters of m. i.	anteroposterior	25
	transverse	30
Diameters of m. iii.	anteroposterior	36
	transverse	29
Length of maxillary bone posterior to m. iii		40
" " mandible from p m. iii to external border of incisors		130
Width at middle of symphysis above		34
" " base of I 3		63
Transverse diameter of crown of I 2.		21
Anteroposterior diameter of crown of I 2		10
Transverse diameter foramen magnum		14
" " occipital condyles		92
Anteroposterior diameter occipital condyles above		50

SUPPLEMENTARY NOTE ON EQUUS FRATERNUS LEIDY.

EQUUS FRATERNUS Leidy, *Proceeds. Phila. Acad*, 1858, p. 11; *Postpliocene Fossils of S. Carolina*, Tuomey and Holmes, 1859, p. 100, Pl. xv Figs. 6, 8, 16, 17, 18, Pl xvi, Figs. 23, 27–29.

This species is represented by a considerable number of teeth together with part of a lower jaw with symphysis, in the museum of the Wagner Free Institute of Science, of Philadelphia.

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* See *Ann. Report Geolog Survey of Texas*, 1892, Plate xxii, Fig 3.

Leidy remarks of this species that it is not possible to distinguish it from the *E caballus* by the teeth, and he has not offered any other characters by which to distinguish it. I was therefore compelled to omit mention of it from my table of the American species of Equus, published in the *Proceeds American Philos Society*, 1884, p. 10, and *Annual Report of the Geological Survey of Texas* for 1893, "Vertebrate Paleontology," p. 66. Subsequently I had the opportunity of examining the dentition and mandible of a horse from Florida, determined by Leidy as the *E. fraternus* and preserved in the museum of the Wagner Free Institute of Science of Philadelphia. One set of dentition belonged to a young horse and the other to an adult In both the posterior wall of the cup of the incisor teeth is extensively interrupted, so as to reduce the triturating surface to a single crescent. On account of this character I proposed to refer the species to a distinct genus, which I called Tomolabis, regarding it as a degenerate offshoot of the genus Equus. A reexamination of the specimens together with the observations above recorded on the incisors of the *E intermedius*, suggests that an examination of a larger amount of material will be desirable before the validity of this genus can be established, since it is possible that a full series of gradations between the characters of the incisors in *E fraternus* and *E intermedius* may be established.

It is demonstrated by the specimens in the Wagner Free Institute that there existed in Florida during probably Plistocene time, a species of horse of considerably smaller size than either the *E. major*, *E intermedius* or *E. occidentalis*, and characterized by an enamel plication of the molars similar to that of the *E. intermedius*, that is, generally a little more complex than is characteristic of the *E. caballus* What characterizes it especially is the small size of the protocone, which has an anteroposterior diameter considerably less than in the species named, not differing much, however, from some specimens of the common horse. Thus this measurement enters the anteroposterior diameter of the grinding surface 2 5 times, rarely twice and one-third times, and in one instance only, twice In the true molars of *E. intermedius*, *E. occidentalis* and *E. major* the proportion of the two diameters is 1 to 1 5 in the great majority of teeth. This peculiarity with that of the incisors indicates, I think, that this horse must be regarded as a distinct species or race.

The part of the mandible referred to contains all the incisors, and the second and third molars of the left side. The latter teeth agree with the largest separate teeth of the collection in characters. The length of the jaw anterior to the p. m. iii is equal to that of the corresponding part of the *E. intermedius* and is considerably shorter than in the *E. caballus*. It must be borne in mind that the molars are smaller than in the ordinary *Equus caballus*, so that this dimension is relatively longer than in the *E intermedius*. Appropriately the symphysis is not so wide at the external incisors as in the latter, and is less contracted at the posterior part of the symphysis, thus again resembling the *E. caballus* The mental foramen is behind the symphysis as in *E. caballus*, but the crowns of the incisors have a transverse width proportionately equal to that of the incisors of *E. intermedius*. This jaw belongs probably to a mare, as there is no canine.

Both superior and inferior molars have the dentine marked with delicate longitudinal ridges. This can of course only be seen where the cementum has been lost.

In the inferior molars the relations of the metaconid to the metastylid are as follows In two inferior molars (separate) they meet at a sharp angle, in five teeth they meet at a sharp angle, but gape widely apart, in three teeth the groove between them is rather shallow, as in the *E. occidentalis*, but not so wide as in the *E eurystylus* and *E. minimus*

Measurements.

		MM
Diameters of crown of superior molar	anteroposterior	29
	transverse	24
Diameters of do., No 2	anteroposterior	25
	transverse	26
Diameters of inferior p. m. ii	anteroposterior	29
	transverse	17
Length from inferior p. m. ii to edge of inferior incisors		123
Width symphysis at base of I iii		58

In this form we have then one which, as remarked by Leidy, approaches nearer to the *E. caballus* than any other That it is a distinct species from the common horse I strongly suspect, from its peculiar incisors, and thinner enamel plates of the molars, but it will be very desirable to examine other parts of the skeleton and especially of the skull in order to establish its true status.

It remains to be understood to what species Leidy gave the name of *Equus fraternus*. In the paragraph where Leidy first named it no locality from which typical specimens were obtained is mentioned, and the description will apply equally well to the *E. intermedius*. In Tuomey and Holmes' *Fossils of S. Carolina*, Leidy first definitely locates the species as based on specimens found near Charleston, S. C. He figures a number of molar teeth, some of which probably belong to the *E. intermedius*. The superior molar, which is first described, is figured on Pl xv, Fig. 6 of that work. Unfortunately, the protocone of that tooth is largely broken off, but enough remains to show that it had the very small anteroposterior diameter characteristic of the Floridan teeth, and in other respects it agrees with them, except that it is larger than usual. This is, however, not sufficiently marked to be important. I therefore regard it as the type of the species as described by Leidy.

DESCRIPTION OF PLATES.

All the specimens figured are the property of the Tulane University

PLATE X.

Fig. 1. Superior molars of *Mylodon harlanii* Ow., from separate teeth, nat. size, from below.

Fig 2 *Mylodon harlanii* Ow., grinding face of inferior m iii from above.

Fig 3. *Mylodon renidens* Cope, maxillary bone with teeth, from below.

Fig 4. *Mylodon sulcidens* Cope; Inferior molar iii profile, *a* from above.

PLATE XI

Fig. 5 *Mylodon renidens* Cope; *a*, *b*, *c*, Inferior molars ii, iii and iv from above.

Fig 6 *Mylodon renidens* Cope, third inferior molar

Fig 7 *Mylodon sulcidens* Cope, *a*, superior m. iv from below; *b*, superior m. iv from inner side

Fig 8. *Equus intermedius* Cope, last five superior molars from below, nat. size, with posterior extremity of maxillary bone.

PLATE XII.

Fig. 9 *Equus intermedius* Cope, Symphysis mandibuli from above, nat. size.

Fig 10. *Equus intermedius* Cope, basioccipital and part of the basisphenoid and adjacent regions, nat size

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An Early Essay on Proportional Representation.

By Edmund J. James

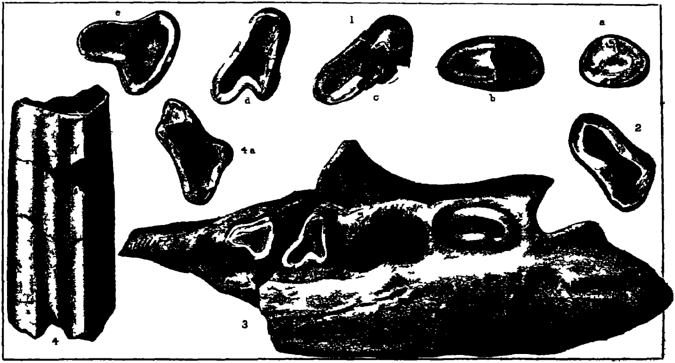
(Read before the American Philosophical Society, December 6, 1895.)

On May 3, 1844, the American Philosophical Society, of Philadelphia, gave Thomas Gilpin, Esq., permission to read a printed paper, entitled, "On the Representation of Minorities of Electors to Act with the Majority in Elected Assemblies." The paper had been printed by the author at his own expense and dedicated to the Society. The date at the end of the paper is May 1, 1844; in the dedication May 3, 1844.

Two copies of the pamphlet are in the Philadelphia Library; one is reported to be in the Boston Athenæum Library; one is in the Harvard College Library; one in the Franklin Institute Library; one in the library of James Monaghan, of West Chester, and there are probably also copies in other libraries. It is a small pamphlet of fifteen pages and was reprinted in the *Penn Monthly* in 1872.

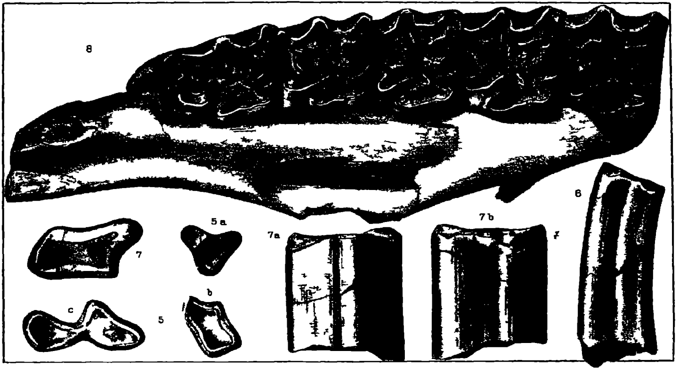
This paper is remarkable as being one of the first systematic discussions

PLATE X



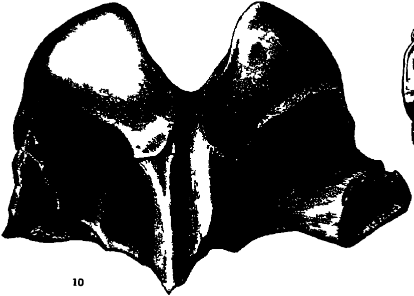
2 MYLODON HARLANII OW 3 M RENIDENS COPE 4 M SULCIDENS COPE

PLATE XI



5 6 MYLODON RENIDENS COPE 7 M SULCIDENS COPE 8 EQUUS INTERMEDIUS COPE

PLATE XII



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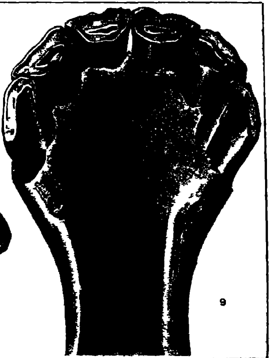

9

EQUUS INTERMEDIUS COPE

of the plan now known as minority, or proportional, representation. The paper antedates Thomas Hare's earliest essays on the subject of minority representation by thirteen years; and that of James Garth Marshall by almost ten years.

The author wrote in a city, the members of whose legislative body, called councils, were elected at the time on a general ticket by a majority of the votes. The results had been unsatisfactory. It seemed to Gilpin that such a plan was based on two principles, one of which was sound, and the other unsound It is right that the majority shall govern, but not right that the voice of the minority shall be unheard He, therefore, undertook to examine the question whether a legislative assembly can be so elected as to represent the respective interests of the community *in deliberation* and to allow to the majority that control *in its decisions* to which it is entitled

The political evils from which the city of Philadelphia suffered at that time seem to be the same as at present—bossism and the subordination of local to national issues. The caucus comes in for severe criticism, and one of the arguments the author advances for his system is, that in his opinion, it would prevent "those hasty and unjust displacements from office which have taken place by granting to the successful party all the benefits of office, so offensive to the sentiments and feelings of a large and independent part of the community, desirous only of a steady, just and impartial administration of government" From which it would seem as if the spoils system had already become firmly established in Philadelphia by 1840, or even earlier.

The system of election by a majority, as distinct from plurality, vote, the author thinks was occasioning many evils—not the least among them that of giving to a small third party an entirely disproportionate influence when the two great parties were nearly equal in numbers. Thus, he said, the system of majority voting in Massachusetts had thrown an entirely undue power into the hands of the abolitionists, who, by giving their support first to one party and then to another, could practically make their own terms, and was thus forcing both the other parties to become radical on the slavery issues, when otherwise neither of them would have been so. Nor did he think that the plan of plurality voting, just then adopted by Massachusetts, as a remedy for this evil, would help matters—on the contrary, it would make it worse, since it might give to a party, absolutely in the minority, the power of controlling the public policy of the community, without consulting the other parties at all.

The plan proposed by the author was very simple Each party was to put up its candidates as usual, a number equal to the whole number to be elected. The voting was to go on in the usual way, each voter having one vote for each of, say, twenty men—that was the number then in Councils. After the election each party was to have a number of representatives assigned to it, bearing the same ratio to twenty, as its vote bore to the total vote The names standing first on the party list should be declared elected until the number assigned to the party should be exhausted The system is worked out in considerable detail in the pamphlet It is practically the Free List System which has been adopted of late in portions of Switzerland

There is no indication in the proceedings of the American Philosophical Society that the paper was discussed in that body either at that time or later nor is it very apparent from the history of the time what the immediate occasion was which gave rise to the paper The subject of representative reform was of course on the tapis at the time The law of Congress requiring the States to be divided into single member districts had only just been passed after great excitement in Congress in answer to a demand for fairer representation and a chance for the minority It is quite possible that more detailed researches will show that these ideas were advanced by earlier writers during the discussions incident to this act of Congress At present they seem in this form at any rate to have been original with Thomas Gilpin even if they had been advanced before by writers and thinkers in Europe which does not yet appear

Hare does not mention having seen this pamphlet though the expressions *quota* and *representative quota* are here used much in the Hare sense J Francis Fisher of Philadelphia in his *Degradation of Our Representative System and Its Reform* (Philadelphia 1863) claims to have worked out a plan similar to Hare s before the latter had published anything upon the subject In such case he may have been indebted to Gilpin or at least to the discussion which Gilpin started for the fundamental thought but if so he forgot to give Gilpin credit for it Fisher was also a member of the Philosophical Society and may have heard Gilpin s paper He must have known of Kane s claim for Gilpin in the obituary notice of the latter read before the Society February 17 1854 in which he said that Gilpin had proposed the first matured plan for minority representation which had gained public attention among us Indeed Fisher could hardly have escaped seeing the pamphlet itself, as Gilpin doubtless sent copies to all his colleagues in the Society

Salem Dutcher in his *Minority or Proportional Representation* speaks of it as the first essay on the subject of Minority Representation in English and states that only one copy was known to be in existence

Thomas Gilpin the author of the paper– which whether the first or not, is certainly an early and cogent argument for the principle of fair play for the minorities—was born in Philadelphia in 1776 and died in the same city in 1853 He was a successful paper manufacturer and has the credit of having introduced many improvements into that branch of industry in this country He came of good old Quaker stock His father, Thomas Gilpin was banished from Philadelphia at the outbreak of the Revolution on account of supposed sympathy with England He had felt in his life the bitterness of belonging to a minority which not only was unrepresented, but was not even allowed to speak on its own behalf His son, whose thoughts may have been turned to the subject by the experience of his father, gathered together a series of papers relating to the treatment of these Quakers and published them in 1848, under the title "Exiles in Virginia, with Observations on the Conduct of the Society of Friends during the Revolutionary War"

Father and son were members of the Philosophical Society, the former, one of the first members, the latter, elected in 1814. Thomas Gilpin was a regular attendant at the meetings of the Philosophical Society, and dedicated other pamphlets than the one on MINORITY REPRESENTATION to the Society, notably one entitled, *An Essay on Organic Remains as Connected with an Ancient Tropical Region of the Earth.*

The history of this pamphlet on proportional representation illustrates in a striking way how there is a time for everything, and how everything must wait for its time. Written at a period when there was a general demand for some kind of reform in our system of representation, it undertook to show how, by adopting a system of proportional representation, the general ticket and caucus system could be made to yield satisfactory results. It failed to accomplish its immediate purpose, and only now, after fifty years, is beginning to bear practical fruit. The caucus system and the single-member district system have not yielded the result hoped for. Whether any scheme of proportional or minority representation can do better, may be a question; but it begins to look as if some such method were destined to have a trial, and in such an event, Gilpin's plan has much to recommend it.

Notes on Photographic Testing of Inks.

By S. P. Sharples.

From the committee appointed by the Society to investigate the various methods for the examination of documents.

(Read before the American Philosophical Society, December 20, 1895.)

Having had occasion to examine a will for alterations recently, it occurred to me that inks of different composition might have different actinic values. In the case in question, the register allowed the will to be photographed in the presence of one of his officers. A negative was thus obtained, which showed on printing an exact copy of the will. Printed in the ordinary way it served all purposes for the examination of the writing. It showed very plainly the places where alterations had been made, and there was no question but these alterations had been made by the person who wrote the will. He acknowledged that he had made the changes, but said that he had made them before the signing of the will.

On examining the writing with the microscope, I became convinced that the alterations were in part at least made with a different ink. If writing is done with a thin ink such as is used in fountain pens, and which is generally made from some aniline preparation such as induline or nigrosine, it will be found that the ink acts in a very peculiar manner. The coloring matter collects on the edges of the stroke, and these are much more intense in color than the centre of the mark The stroke may be defined as a road with a hedge on either side of it. This peculiarity is found in many other inks when they are first applied to the paper. But as the ink ages, in the case of the so-called chemical inks the centre of the stroke becomes dark and the contrast disappears In the case of the inks which undergo no chemical change, the contrast is permanent. The examination under a microscope serves to demonstrate these points to an expert and fully satisfy him But unfortunately neither judges nor juries are experts, and you can never rely on either of them to see things that are perfectly plain. It struck me that by the aid of the photograph I could bring out these differences. I first tried enlarging the photograph The printer produced a good picture, but in his desire to make a good print he spoiled it for my purposes I got him to make another trial, telling him I did not want a good picture, but one that was very much under exposed. This brought out the differences in the ink well. The portion written with the aniline ink had almost disappeared, except the edges of the stroke. That written with the chemical ink was almost as distinct as in the first print. I also made a number of contact prints, exposing the paper under the negative a very short time, and in this manner getting prints in which the contrast between the two inks was very marked. Lantern slides were also prepared from the negatives. These also showed the differences in the inks very plainly. In practice I would suggest that two negatives be made of the writing, a strong and a weak one; that prints be made from each of these in the way above spoken of, that is, gradually increasing in strength, and that several lantern slides be made from the negatives in the same manner as the prints These slides when projected on the screen will serve to bring out the differences in the inks of which I have spoken. The court and defense in this case became fully convinced that the writing was done with a different ink, but the defense was equal to the occasion, and having found out what kind of ink would answer the purpose, they swore that there were two kinds of ink on the table where the will was written, and that the alterations were made from the ink in the second bottle. This second bottle was used only for the alterations; all the signatures were made with ink similar to that used in the body of the will. One witness swore positively that the alterations were made at a different place, and with such an ink as I described; that is, an ink that had been exposed to the air for a long time.

Evidences of the action of two hands in joint signature marks.

By Persifor Frazer

From the committee appointed by the Society to investigate the various methods for the examination of documents.

(*Read before the American Philosophical Society, December 20, 1895.*)

If it be conceded that the effect of a given individual's will on that individual's mechanism of bones, muscles, nerves, etc, with which it has been associated in all acts of the possessor of both, results in the production of a script characteristic of that individual and of no other, it ought to follow that whatever be the pattern traced, whether a simple cross or a more complex series of conventional signs as in hand-writing, it should contain characteristics of the writer. In the case of a simple cross, these characteristics are much more difficult to discover than in that of ordinary writing or name signing, but that they exist no one will deny who has taken into consideration the invariable tendency of mankind to contract habits in the performance of all acts which it repeats during a long period, and the growth of a habit in any organized being from constantly taking the easiest method under existing conditions to accomplish what the will has commanded

The fact that simple marks, made by persons ignorant of the art of writing or deprived of some organ or faculty possessed by the majority of their race, contain characteristics of the individuals who make them, is a logical sequence of the principles of grammapheny,* and is susceptible of actual demonstration

It is not the object of this paper to treat of marks of this kind, but of those which are made by one person while another touches the pen-holder.

If great difficulties are encountered in dealing with the first kind of marks the difficulties in those of this second kind are vastly greater and might well be considered insurmountable in so far as the problem is concerned with the establishment of individual character from the traces of *resistance* to free pen movement observable in the joint mark.

The undersigned speaks thus cautiously of the possibility of establishing the characteristics of one person from the traces of his interference with the free work of the actual holder of the pen, a problem comparable to the determination of the orbit and mass and of an unknown planet from the effect of the latter on the movements of a known planet, because it is not possible to state how far legitimate investigation may be extended in the future by new devices and larger knowledge.

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* This word has been used by the writer in his treatise on *Bibliotics, or The Study of Documents* (J B. Lippincott Co., Philadelphia, 1894), to express the "elucidation of the individual character of hand-writing, or that by which it distinguishes itself from every other hand-writing"

For the present he leaves this problem untouched, admitting that the chances seem against its ever being successfully solved, and addresses himself to the less complex question, "Can a mark made by one person while another is touching the penholder be distinguished from a mark made freely and without external hindrance?"

Without theorizing on the subject, it can best be introduced by the statement of an actual investigation of marks made by a certain man while the penholder was touched by a blind woman.

The simple question was whether or not the marks attached to certain documents were made while the hands of two persons touched the same penholder

By a cursory examination of the signature marks of some documents (of which the genuineness was disputed) with the signature marks admitted as genuine joint marks, a notable difference was observable. Whereas the former appeared well formed and shaded and gave evidence of having proceeded from a hand skilled in the use of the pen, the latter were ill-formed and ragged, neither symmetrical nor indicating the free movement of an experienced writer. The lines of the admitted signature marks were thin, and especially the cross stroke (which was drawn from the upper left hand to the lower right hand), longer than the similar lines in the disputed signatures. A superficial observation, while plainly indicating differences between the disputed and undisputed signatures failed to establish their respective degrees of importance

Before further study an examination was made of a list of twenty odd names, among which was what was claimed to be an unauthorized and fraudulent signature cross An inspection of both names and cross enabled the undersigned to select the signature which was written by the hand that made the disputed name cross The slant of the lines and the spread of the pen nibs corresponded so closely in the two cases that the careful measurements, which were immediately undertaken, were not needed to reveal the connection. This preliminary fact having been substantiated, a meeting between the persons who made the joint marks was arranged in order that their method of proceeding might be witnessed.

As there was a difference of statement between the two as to this method, specimens were taken under the conditions described by each.

The blind woman insisted that she grasped the top of the pen firmly. The guider of the pen maintained that his collaborator merely touched the top of the pen lightly while he wrote.

Joint marks were made by the two persons concerned under observation and were carefully measured. The tabulated results will be found elsewhere (see Table I). Similar measurements were made of other admitted and disputed signature marks and similarly tabulated.

These results also will be found in their appropriate places. The measurements are divided into measures of length and measures of angles, with scrutiny of the manner in which each stroke began and ended.

The bearing of this latter feature upon the question of single or joint production was obvious, because with a foreign hand touching the penholder ever so lightly those movements which depended upon the exercise or release of slight pressure could be produced only in a very imperfect manner.

The tables will be found self explanatory, but it may be worth while to call attention to a method of utilizing their results which seems to be important in proportion to the diversity and complexity of the factors which enter into them The extraction of information from tables of statistics is frequently more difficult than the procuring of the statistics themselves Let any one attempt to master, say the significance as life insurance tables of the necrological reports of the cities and of the country at large, and he will appreciate the value of the art of Mrs. Glass after the hare is caught.

It may be stated as a general fact that the effect of minor components of composite forces are more clearly distinguished when the ratios of parts to each other and to the whole are considered. It is true that this method of presentation is open to the objection that it magnifies very small differences, but on the other hand it clearly distinguishes cases which have resulted from closely similar conditions. The real table of information, therefore, is a table representing the ratio to each other of columns in the original table, and the percentages of difference between measurements of objects whose origin is unknown or in doubt from those of similar objects whose origin is known. It is in this way that the full force of effects produced as in this case by the resistance of a hand touching a moving penholder may be made manifest, as the tables herewith given seem to show. (See the left hand column of Table I, marked $\frac{A}{B}$, or ratio of column A to column B)

When this work had been done, further experiments in joint signature marks by various persons were undertaken, in order that the conditions peculiar to the above case might be replaced by generalizations useful in a wider field of inquiry.

With this view over three thousand five hundred marks were produced and examined, and the table which follows gives the percentages of the occurrence of various features in the free and in the joint marks respectively Exception percentages such as 2 or 10 in the results indicate different degrees of uniformity in the occurrence or absence of a given characteristic in a mark. Obviously, any feature to which there was not a single exception in the three thousand five hundred experiments, is of importance The only such feature discovered in these observations was the existence of ragged side terminals in some part, and usually throughout the greater part of a joint mark When a mark is entirely free from such an appearance, therefore, it may be assumed, with a strong degree of probability, that it was not subjected to the influence of two hands.

In the following summary, as well as in Table I, the letters R. U. mean "right upper" (corner), and L. D. mean "left down" (or left lower cor ner), R. U. L. D. means the stroke made from the right upper to the left lower corner, and L. U R D means the stroke from the left upper to the right lower corner. Proceeding from the right upper side in the direction of the sun or of the hands of a watch the four quadrants are designated by R. U , R D , L. D., and L. U., respectively

SUMMARY OF NOTES OF THE ABOVE CASE.

A Undisputed Joint Marks.	B Disputed.
1. R U. L. D not convex to R. D.	1. R. U. L D convex to R. D
2 Lines do not broaden in the direction in which drawn.	2. Lines broaden in the direction in which drawn
3 One, and usually both, of the edges of line are crooked and irregular: one edge continuously so.	3. One edge straight (usually both edges). Crookedness not continuous on either edge.
4. In all genuine cases examined R. U. L D was shorter than L. U R. D.	4 In 66 p. c. of cases examined R U L. D was longer than L U. R. D.

In three thousand five hundred independent examinations of experimental marks, made either by one individual or by the joint efforts of various couples, there were found to be 10 p c of exceptions to A 1 ; 2 p. c of exceptions to A 2 ; but no exceptions to A 3

A 4 varied so much with the writing habits of different individuals that it is not regarded as of sufficient value to serve as a basis of discrimination

It should be noticed that the usual absence of strokes convex to R. D would naturally follow from the situation of the point of resistance when the pen is held in the position which the writing masters used to call "natural," or slanting downward from left to right and pointing over the right shoulder

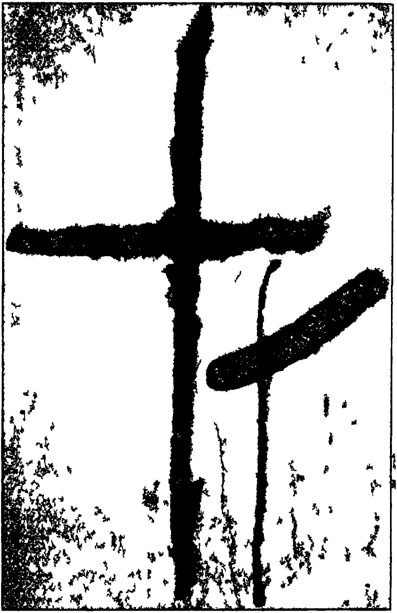
In this position to make a stroke R. U. L. D. convex to R. D would require that the weight, added by the contact of the second hand, should be lifted, because in the act of drawing such a line the penholder must be changed to a more erect position, and the distance between the plane of the paper and that in which the top of the penholder lies would be increased. In drawing the line concave to R. D. this distance would be diminished, and there would be no resistance to overcome.

The illustrations on Plate xix are fairly typical of the respective characters of joint pen marks made while two hands touch the penholder as in the larger cross, and marks made freely by a single hand as in the smaller cross.

Both have been selected from the specimens of hand-writing examined in the case above referred to. It should be borne in mind that the positions of these two crosses relatively to the horizontal guide line are not in-

Table I Study of marks made by a good penman, while the penholder was touched by a blind woman

Description of Document	Ratio $\frac{A}{B}$	A	B	C	D	E	F	G	REMARKS
		LENGTH mm		BREADTH mm		ANGLE WITH HORIZONTAL			L u r d means from Left up to Right Down R u l d means from Right up to Left Down
		First stroke of cross	Second stroke of cross	First stroke of cross	Second stroke of cross	Upper first stroke of cross	Upper second stroke of cross	Right terminal of second stroke	
1	1 43	r u l d 1.5 Concave to l d	l u r d 8 7	r u l d 0 25	l u r d 0 75 1 00	r u 30° 35°	l u 15°	45°	As the pressure ceased suddenly on completing l u r d a small drop of ink was left outside of terminal The hollow of the pen was turned to the right in both strokes No deviations except in the lower part of r u l d where an obstruction in the paper caused it Blue in r u l d extinguished by yellow prism at 47 mm
2	1 10	r u l d 5 5	l u r d 5 0	r u l d 0 25	l u r d 0 75 1 00	r u quadr 60°	20°	60°	Blue in r u l d extinguished by yellow prism 38 mm L 40 mm
3	1 30	r u l d 9 0	l u r d 6 0	r u l l 0 30	l u r d 1 00 1 30	r u quadr 30°	l u quadr 10°	r u quadr 50°	As pressure ceased suddenly right end of second stroke drop of ink released Blue l u r d of cross extinguished by yellow prism 40 mm C 20 mm
4	0 75	4 0	5 5	0 25	0 50 1 00	r u quadr 40°	l u 7°	r u quadr 30°	Release of pressure causes irregular knob to right but ink being deficient no blot l u r d even and without tremor only irregularity in upper furrow where r u l d appears above edge
5	1 00	r u l d 6 5	l u r d 6 5	r u l d 0 50	0 50 1 00	r u quadr 50°	l u quadr 40°	r u quadr 50°	Cross blotted Blue in l u r d of cross ext yel prism 35 mm C 36 mm
6	1 37	8 0	4 5	0 50	1 0 1 25	r u quadr 40°	l u quadr 30°	r u quadr 30°	Cross blotted Lines even in pen furrows and without tremor Same tendency to produce small knob at right terminal of l u r d
7	0 96	r u l d 6 5 Concave to r d	l u r d [illegible]	r u l d 0 50	0 50 1 00	r u quadr 50°	l u quadr 45°	70°	Blue of l u r d in cross extinguished by yellow prism 36 mm in P J C 37 mm
8	1 11	r u l d 5 0	l u r d 4 5	0 25	0 50 0 75	r u quadr 50°	l u quadr 30°	?	Blue in l u r d of cross extinguished by yellow prism 32 mm C 30 mm
9	0 70	r u l d 6 0	l u r d 8 5	r u l d 0 50 1 00	l u r d 0 50 0 50	r u quadr 75°	l u quadr 30°	?	Blue in l u r d of cross extinguished by yellow prism 25 mm C 28 mm
10	1 62	r u l d 8 5	l u r d 4 5 6 0	r u l d 0 25	l u r d 1 25 1 50	r u quadr 55°	l u quadr 12° 0°	50°	Apparently the pen was dipped in ink before second stroke was made l u r d very [illegible] increasing in width terminating by gradual release of [illegible] sure on nibs same character as in P J underneath
11	1 45	r u l d 8.0	l u r d 5 5	r u l d 0 50 1 00	l u r d 0 75 1 25	r u quadr 55°	0°		Blue of l u r d cross extinguished by yellow prism 58 mm red prism 9 mm C extinguished by yel prism 5 mm 8 mm Made with heavier ink l u r d very thick surrounded by marginal stain r u l d made in two strokes the cross stroke covering the break (?)
12	1 30	r u l d 9 0	l u r d 5 0	r u l d 0 25 0 50	1 00 1 00	r u quadr 25°	l u quadr 30°	r u 40°	Blue in l u r d of cross extinguished by yellow prism 31 mm red prism 6 5 mm Blue in C ext by yel prism 3[illegible] mm Blue r u l d cross extinguished by red prism 17 mm P of P J C 15 mm
Average α	1 25	7 40	5 45 6 32	0 48 0 40	0 79 1 03	45° 37	27° 08	49° 33 ? av of inc	
13	0 44	l u r d 4 00	l u r d 9 0	l u r d 0 5	l u r d 1 0	l u quadr 30°	l u quadr 20°	?	Blue in l u r d cross extinguished by yellow prism 32 mm J 43 mm
14	0 85	r u l d 5 00	l u r d 4 5 6 0	r u l d 0 5	l u r d 0 5 1 0	r u quadr 40°	l u quadr 40°	27°	
15	0 91	r u l d 5 00	l u r d 5 5	r u l d 0 5	l u r d 1 0 1 5	40°	54	curved	
Average β	0 75	4 86	6.58	0 50	0 83 1 15	50° 66	35°	2 ° ?	
Diff α and β 40 p c.		59	2 7	4 20	5 12	17	24	79 ?	



Magnification of the larger cross 8.75 and of the smaller cross 10.38 new measurement

dicated here, the two crosses having been arranged in such a way as to be included on a single plate. These positions or the angles made by each stroke of the cross with the horizontal guide line are of considerable importance in assisting one to form an opinion as to the identity of the writer, because the directions of these lines are governed by the writer's physical structure and peculiarities of will and muscular power, which together with the original model adopted produce the result which habit makes permanent. The illustrations given here are intended to show the difference between marks made by the joint action of two hands and by a single unhampered hand, to which there was no exception in the series of experiments undertaken.

All the lines are considerably blurred owing to the uneven absorption of the ink by the adjacent parts of the paper and also to the fact that the crosses were too hastily blotted after having been drawn, and the photograph magnifies these defects For this reason the long lines in the illustrations are not sufficiently distinct to enable one to form an accurate judgment as to the crookedness of their lateral margins It will, however, be conceded that of the four marginal edges, those of the broader line in the large cross are much more irregular than those of the broader line in the smaller cross.

Stated Meeting, November 1, 1895.

Secretary, Dr. Brinton, in the Chair.

Present, 12 members.

Dr. A. P. Brubaker, a newly elected member, presented to the chair, and took his seat.

Correspondence was submitted as follows:

Letters of acceptance of membership from Sara Y. Stevenson, Sc.D , Philadelphia, and Albert P. Brubaker, M.D., Philadelphia.

Letter from F. P Harper accompanying a donation of "Zebulon Pike's Expeditions," and suggesting the desirability of publishing a manuscript diary of the revolutionary period in the Society's possession. The letter was referred to the Publication Committee.

Letters of envoy from the Geological Survey of India, Calcutta; Académie R. des Sciences, Amsterdam, Netherlands; Schlesische Gesellschaft für Vaterlandische Cultur, Breslau, Prussia; Wetterauische Gesellschaft für die gesammte Naturkunde, Hanau, Germany; K. Sachsische Gesellschaft der Wissenschaften, Leipzig; K. Geodatische Institut, Potsdam, Prussia; Zoölogical Society, London, England.

Letters of acknowledgment from the Société Imp. des Naturalistes, Moscow, Russia (143, 146); Société R. de Geographie, Antwerp, Belgium (147); Musée R. de Histoire Naturelle de Belgique, Bruxelles (147); Fondation de P. Teyler van der Hulst, Harlem, Holland (147, and *Trans.*, xviii, 2); Prof. J. Szombathy, Vienna, Austria (147); Physiologische Gesellschaft, *Centralblatt fur Physiologie*, Berlin, Prussia (142–146); Verein für Thuringische Geschichte und Alterthumskunde, Jena, Germany (147); Drs. O. Böhtlingk (147), Julius Platzmann (146), Leipzig, Saxony; Naturwissenschaftliche Verein, Regensburg, Bavaria (141–146); Prof. J. P. Postgate, Cambridge, England (142–147); Radcliffe Observatory, Oxford, England (147, and *Trans.*, xviii, 2); Prof. Lyman B. Hall, Haverford, Pa. (147).

Accessions to the Library were reported from the K. Akademie van Wetenschappen, Amsterdam, Netherlands; Akademie der Wissenschaften, Budapest, Hungary; K. Akademie der Wissenschaften, Vienna, Austria; Société R. des Sciences, Liége, Belgium; K. P. Geodätische Institut, Berlin, Prussia; Schlesische Gesellschaft für Vaterlandische Cultur, Breslau, Prussia; Oberhessische Gesellschaft für Natur- und Heilkunde, Giessen, Germany; Naturhistorische Gesellschaft, Nürnberg, Bavaria; Royal Society, London, Eng.; Geological Survey of Canada, Ottawa; Society of Naval Architects and Marine Engineers, Academy of Sciences, New York, N. Y.; Pennsylvania Hospital, Philadelphia; Smithsonian Institution, Mr. Alexander M. Bell, Washington, D. C.; Wisconsin Academy of Sciences, Madison; University of Chicago, Chicago, Ills.

A memoir of P. F. Rothermel was read by Mr. J. G. Rosengarten.

Mr. Prime spoke on the effect of the rapidly increasing production of gold on values generally.

Dr. Dolley called attention to the many ways in which biological science is being applied in industrial and commercial processes, and referred to the methods employed in the preservation of food-stuffs, as milk, fruit juices, etc. He spoke of experiments which he had been making since July on the bactericidal effects of carbonic acid gas. This gas proved sufficient to check all fermentative processes in many cases where the fluids were first exhausted of air and then subjected to the action of CO_2 under high pressures.

Mr. Rosengarten moved that the Publication Committee be requested to examine the diary of Mr. Sullivan, and to report to the Society whether, in their opinion, it would be worthy of publication by the Society. Carried.

The Society was then adjourned by the Chairman.

Stated Meeting, November 15, 1895.

President, Mr. Fraley, in the Chair.

Present, 22 members.

Dr. Billings, Mr. Joel Cook and Mrs. Stevenson, newly-elected members, were presented to the Chair, and took their seats.

Correspondence was submitted as follows:

A letter from the Instituto Geológico, Mexico, announcing the death of its founder and director, Don Antonio del Castillo, October 27, 1895.

Letters of envoy from the Royal Statistical Society, London, Eng.; American Antiquarian Society, Worcester, Mass.; U. S. Coast and Geodetic Survey, Washington, D. C.

Letters of acknowledgment from the Académie R. des Sciences (143–146), Royal Zoölogical Society (147 and *Trans.*, xviii, 2), Amsterdam, Netherlands; Royal Zoological and Botanical Society, The Hague, Holland (147), Maatschappij der Nederlandsche Letterkunde, Leiden, Holland (147); Friesch

Genootschap, Leeuwarden, Netherlands (147), Observatoire Physique Central (147), Prof S Nikitin (145, 146, 147) St Petersburg, Russia, K Vetenskaps Akademiens, Stockholm, Sweden (145, 146), Dr Japetus Steenstrup, Copenhagen, Denmark (147), Gesellschaft fur Erdkunde, Berlin Prussia (147), Osservatorio di Torino, Torino, Italia (145, 146), Mr C Juhlin Dannfeld, London, Eng (147), Geological Society, Glasgow, Scotland (145), Bowdoin College, Brunswick, Me (147), American Mathematical Society, New York, N Y (147)

Accessions to the Library were reported from the Royal Observatory, Cape of Good Hope, Africa, R Geographical Society (Queensland Branch), Brisbane, Australia, Royal Society N S Wales, Sydney, Australia, K K Militar Geographische Institut, Vienna, Austria, K P Meteorologische Institut, Berlin, Prussia, K Sachsische Meteorologische Institut, Chemnitz Saxony, Verein fur Erdkunde, Dresden, Saxony, Senckenbergische Naturforschende Gesellschaft, Frankfurt am Main, Germany Verein fur Erdkunde, Metz, Germany, Mr Andrew McFarland Davis, Cambridge, Mass, Scientific Association, Meriden, Conn, American Museum Natural History, Prof W LeConte Stevens, Mr Francis P Harper, New York, N Y, Academy of Science, Rochester, N Y, Memorial Committee, Dr D G Brinton, Messrs W H Seelay, Jules Viennot, Philadelphia, Pa, Field Columbian Museum, Chicago, Ill

Deposited, by Dr J C Morris, a Tilghman microscope, candlestick pattern, made by Samuel Powel and Dr Morris, at Newport, R I, August, 1864

The following description was given

"The stand supports a cradle in which the compound body slides and rests, being supported by a clip in which plays a screw with ten threads to one inch This affords a coarse and medium adjustment, it rests movably also on a lever hinged to the upper part of the cradle, so that the point of the screw being placed at a given distance—say one tenth—from the fulcrum or joint, the raising of the extremity of the lever—say one-tenth of an inch—will give a rise of one one-hundredth of an inch to the compound body. The free extremity or long arm of the lever is raised by a rod fastened to the cradle furnished with a screw ten threads to one inch so that one-tenth of its revolution in such a case would mean a change of one one-thousandth of an inch in elevation or depression of the compound body. In this way a fine adjustment is provided, which is also capable of *measuring accurately* the penetrating power or depth of focus of any lens or objective placed on the compound body. The stage is formed of a glass slide or plate of glass held firmly to two prongs of brass projecting from the lower end of the cradle by two brass clips or springs—thus admitting of free motion by the fingers of the observer in any direction, and of firm retention of the slide in any position, yet without any appreciable depth of staging; to the under portion of these prongs, however, any substage accessories may be attached, such as prisms, condensers, etc. The mirror is jointed to the cradle so that light can be thrown on an object at any angle. And if it be desired to measure the working angle of aperture of any objective it may readily be done by a scale placed concentrically with the object examined. The cradle rests on the pillar movably so that it may render the compound body useful at any angle between 80° and 15°.

"The materials for this microscope cost us $12 67, including $10 paid for a one-eighth objective regarded as useless by the optician from whom it was purchased on account of wrong spacing between outer and middle lens, which was remedied by slipping the collar: the putting it together occupied us two days. It proved very useful as a field instrument which if broken could readily be repaired."

Prof. E. D. Cope read by title and explained the contents of two communications, "The Reptilian Order Cotylosauria" and "On Some Plistocene Mammalia from Petite Anse, La."

Dr. D. G. Brinton read a paper entitled "Some Words from the Angagueda Dialect of the Chocos," and illustrated by a map the positions of the various tribes in Northern South America and their linguistic relations to each other.

Mr Mercer spoke of recent finds in Wyandotte and other caves, exhibiting specimens

Prof James presented copies of two letters written by Dr Franklin, the originals being now in Leipzig

I take pleasure in presenting to the American Philosophical Society, copies of two letters by Benjamin Franklin one, dated Philadelphia, November 28 1751 and addressed to President Clap the other, dated Philadelphia December 12 1763 and addressed to the Rev Mr Stiles Newport R I The first letter is written on one side of a folio leaf, the second is a double quarto leaf written on one side The originals of these letters are in the University Library at Leipzig, they were copied for me through the courtesy of the Librarian Prof Dr Gebhardt

I do not know that these letters have any special value, but my own experience in such matters leads me to the conviction that it is desirable to file and preserve all such letters as the most insignificant and innocent looking one may be the means owing to its relation to other letters, of enabling us to determine important facts in the life of the parties concerned

In this connection I should like to call the attention of the Society to a visit which Dr Franklin paid to Germany in the year 1766, and which appears to have been almost entirely neglected by his biographers The only reference to it, which I have been able to find in the works or lives of Franklin, is a letter to his wife dated London, June 13, 1766, and printed in Sparks' *Works of Franklin*, Vol vii, p 320, in which he writes that he expects to start with Sir John Pringle on a journey to Pyrmont on the next day As he says in this letter that he proposes to visit some of the German cities near Pyrmont I thought perhaps it might be interesting to find if any references to this visit occurred in the German literature of the time or later In a pamphlet published at Gottingen in 1890, containing addresses delivered on the 4th of July of that year by various Americans in Göttingen, I found the statement that Benjamin Franklin was in Göttingen for a short time in the autumn of 1766, that he had in mind the establishment of a university at Philadelphia and desired to study the organization of the University of Göttingen, with a view to obtaining such suggestions as might be useful to him

The baths of Pyrmont, which have been famous for several centuries, are still a well known resort in Germany I wrote, therefore, to the director of the baths to find out whether any record of Franklin's visit had been kept He replied that the original records of the management had been lost, but that in a book published at Berlin in 1788, entitled, *Pyrmont Brunnenarchiv*, a list of the guests at Pyrmont from 1759 was printed and that under the year 1766 was to be found the following entry

"Leib Medicus Ritter Pringle aus London und Dr Franklin aus Pennsylvanien, kommt aus London"

That Franklin visited Gottingen we have ample evidence in the reports of the Göttingen Academy of Sciences to be found in the library of this Society In the 110th issue of the *Gottinger Anzeiger* bearing date of September 18 1766 the statement is made that the session of the Royal Academy of Sciences held on the 10th of the preceding July was more impressive than usual as the two famous English scholars the royal physician Mr Pringle and Mr Benjamin Franklin from Pennsylvania who happened to be at that time in Gottingen on a trip through Germany took their seats as members of the Society The same periodical in its issue of September 27 1766 says that Pringle and Franklin visited Mr Hartmann in Hanover in order to see his apparatus for strong electrical experiments

Franklin appears to have been gone on this trip about two months In the collection of Franklin s letters possessed by this Society I found one or two references to this trip but nothing which throws any light upon what cities he visited or what eminent men he met One of the professors at Gottingen the famous statistician Achenwall had a long conversation with Franklin about the American colonies which he subsequently published in the *Hannoversches Magazin* and some account of which I gave in a letter to the New York *Nation* printed in the issue of April 18 1895

Very truly yours
EDMUND J JAMES

Copy of a letter in the University Library at Leipzig addressed to The Rev Mr Stiles Newport R I

PHILADELPHIA December 12 1763

Dear Sir

According to my Promise I send you herewith the Prints copied from Chinese Pictures concerning the Produce of Silk I fancy the Translator of the Chinese Titles has sometimes guess d and mistaken the Design of the Print in his Account of what is represented in it But of this you will better judge than I can I have some Accts of the Silk in Italy which I will the first Leisure I have transcribe and send you I am with great Esteem Dear Sir

Your most obedient
humble Servant
B FRANKLIN

P S Did I leave with you Aepinus s Discourse on the Distribution of Heat over the Earth? If not I have forgot what I have done with it

Copy of a letter in the University Library at Leipzig addressed to "President Clap:"

PHILADELPHIA, November 28, 1751.

Sir:

I am heartily sorry for your
Disappointment in Letort, I would
not have imagin'd he would have behav'd
so imprudently, and let so very profitable
a Jobb slip thro' his Fingers I have
done with him
I hope you will be able to procure a
Subscription to furnish your College with a
compleat Apparatus for Natural Philoso-
phy If you are like to succeed I will con-
tribute the Electrical Part
Borver has lain ever since in Mr.
Parker's Hands at New York He desires
you would order one of your Boatmen to
call for it.
We had the Pleasure of a little of Mr
Whittelsey's Company a few Days since
I hope he will get well home.
My Respects to all Friends. Please
to accept the enclos'd from, Dr Sir,
Your obliged huml
Servn
B. FRANKLIN.

On a question by Mr. Prime, the President decided that the action of a by-law cannot be suspended, but must be changed by amendment made in the usual manner.

New nomination 1331 was read, and after the reading of the rough minutes the Society was adjourned by the President.

Stated Meeting, December 6, 1895.

President, Mr. FRALEY, in the Chair.

Present, 103 members.

Mr. Clarence S. Bement and Fred. D. Stone, newly-elected members, were presented to the Chair and took their seats.

Correspondence was submitted as follows

A letter from the Kaiserliche Universitats und Landes Bibliothek was referred to the Secretaries, with power to act

Letters of envoy from the Société Royale des Sciences, Upsal, Sweden, Institut Physico Geographique National, San José de Costa Rica, C A

Letters of acknowledgment were received from the Public Library, Wellington, N Z (143, 146), Institut Egyptien, Cairo, Egypt (143, 146), Soc Imp des Naturalistes, Moscow, Russia (143), Comité Géologique de la Russie, St Petersburg, Russia (143, 146, 147), Tashkent Observatory, Tashkent, Russia (147), Société R des Sciences, Upsal, Sweden (142, 144, 145), Colonial Museum, Haarlem, Holland (147), Dr H Snellen, Jr, Utrecht, Netherlands (147), Prof A F Renard, Brussells, Belgium (147), Prof Peter R v Tunner, Leoben, Styria (146, 147), Dr Aristides Brezina, Vienna, Austria (147), Naturforschende Gesellschaft des Osterlandes, Altenburg, Germany (147), Prof F Reuleaux, Berlin, Prussia (147), K Sachs Meteorologisches Institut, Chemnitz (147), Naturforschende Gesellschaft, Emden, Prussia (147), Verein fur Erdkunde, Halle a S (147), Deutsche Seewarte, Hamburg, Germany (147), Prof E Haeckel, Jena, Germany (146), Naturwissenschaftliche Verein, Osnabruck, Prussia (147), K Geodatisches Institut, Potsdam, Prussia (147), Wurttembergische Verein fur Handels Geographie, Stuttgart (147), Marquis Antoine de Gregorio, Palermo, Sicily (143, 146), Prof Guido Cora, Turin, Italy (143, 146), Société Française de Physique, Le "Cosmos," Prince Roland Bonaparte, M A Des Cloizeaux, Prof E Mascart, Marquis de Nadaillac, Paris, France (147), Société de Geographia, Toulouse, France (147), Mr Samuel Timmins, Arley, Coventry, England (147), R Astronomical Society, London, Eng (147), Natural History and Philosophical Society, Belfast, Ireland (143, 146, 147), University of the State of New York (147, and *Trans*, xviii, 2), Prof James Hall, Albany, N Y (147), U S Weather Bureau (147), U S Department of Agriculture (71–77, 9–91, 100, 107–109, 141–147), Washington, D C, In stituto Fisico geografico Nacional, San José de Costa Rica, C A (148, 146, 147), Museo Nacional, Buenos Aires, S A (143, 145, 146)

Accessions to the Library were reported from the Societatea Geografică Romana, Bucuresci, Société R des Sciences, Upsal, Sweden, Société Batave de Philosophie Experimentale, Rotterdam, L Holland, K Sachs Alterthums Verein, Dresden, Prof Dr Paul Schreiber, Chemnitz, Saxony, Islenzka Fornleifafjelags, Reykjavik, Nova Scotian Institute of Science, Halifax, Boston Society of Natural History, American Academy of Arts and Sciences, Boston, Mass, Mr Andrew McFarland Davis, Cambridge, Mass, Agricultural Experiment Station, Storrs, Conn Historical and Library Association, Yonkers, N Y, Prof E J James, Dr Prof Lewis M Haupt, C A Oliver Philadelphia, Cincinnati Public Library, Society of Natural History, Cincinnati, O, University of Minnesota, Minneapolis, Library Association, Portland, Ore, Instituto Fisico geografico Nacional, San José de Costa Rica, C A, a photograph of Mr Peter F Rothermel, Linfield, Pa, for the Society's Album, from Mr Julius F Sachse

The death was announced of Mr William J Potts, Camden, N J, November 18, 1895, æt fifty three, and the President was requested to appoint a member to prepare an obituary notice

The report of the Treasurer was read, giving in detail the receipts and expenditures, and, in accordance with the laws, was referred to the Finance Committee.

The Publication Committee reported their proceedings during the year and offered the following resolutions

Resolved That the Publication Committee recommend to the Society that the Board of Secretaries shall have the power to dispose by gift or sale, of the *Proceedings* of the Society in excess of twenty numbers each, in compliance with applications from individuals or Societies

Resolved, That the Society be recommended to direct the publication of obituary notices hereafter separate from the *Proceedings* or *Transactions* of the Society

On motion, duly seconded, the recommendations of the Publication Committee were approved

The special Committee on Collations made a final report and asked discharge which was granted

The President announced the appointment of Hon Craig Biddle and Hon Mayer Sulzberger to fill vacancies in the Henry M Phillips Prize Essay Fund Committee

The following papers were read by titles and referred to the Secretaries

"The Hypenoid Moths and Allied Groups," by A Radcliffe Grote A M

"An Early Essay on Proportional Representation" by Edmund J James

Dr D G Brinton explained the contents of his paper on the "Matagalpan Linguistic Stock"

Pending nomination 1331 for membership, and new nominations 1332 1333, were read

Curator Morris offered the following resolution, which was unanimously adopted

Resolved That the Curators be authorized in accordance with the policy heretofore adopted to deposit at the Pennsylvania Museum and School of Industrial Art such medals and casts as are at present in the museum of the Society under the same conditions as are attached to our collection of coins medals and casts now deposited at the Pennsylvania Museum and to take proper receipt for them

Dr Persifor Frazer offered the following resolutions, which on motion duly seconded, were unanimously approved .

WHEREAS Chapter II Section 5 of the Laws of the American Philosophical Society ordains that no one shall be esteemed a qualified voter at the election who has not subscribed the Laws etc etc and

WHEREAS The book in which the signatures of members of the Society have been inscribed contains the old but not the now existing Laws of the Society and

WHEREAS It would entail many difficulties and inconveniences to commence a new list of signatures after every change in the Laws or to attach every change to the old book now in use Therefore

Resolved That this Society regards the affixing of a signature to the pages devoted to that purpose in the present book to be the performance of the duty required above and that this act be duly declared to be subscribing to the Laws of the Society in force at the time of such act

Resolved That a copy of this resolution duly attested by the Secretaries be attached to the book containing the signatures

Mr. McKean raised the question as to whether attendance at an annual election was an attendance at a meeting within the meaning of the laws as to qualification for voting at a subsequent annual election.

After discussion by Gen. Wistar, Prof. Houston, Mr. Price and others, the following resolutions were offered by Mr. Price, duly seconded, and unanimously adopted:

Resolved, That attendance and voting at any annual election held by the Society shall not be considered as a qualification for voting at the next annual election

Resolved, That the judges of the election be informed by the Secretary of the adoption of the above resolution.

After reading the rough minutes, the Society was adjourned by the President.

Stated Meeting, December 20, 1895.

The President, Mr. Fraley, in the Chair.

Present, 41 members.

Mr. C O. Harrison, a newly elected member, was presented to the Chair, and took his seat.

Minutes of preceding meeting were read and approved.

Correspondence was submitted as follows:

A letter from Rev. E. A. Foggo, D.D., Philadelphia, requesting a certificate of membership, not having received the one sent him.

Letters of acknowledgment were received from the Naturf. Gesellschaft, Dorpat, Russia (143, 146); Société Physico-Mathématique, Kasan, Russia (147); Académié R. de Belgique (148); Société R. Malacologique de Belgique, Bruxelles (142–147); K. K. Universitats Sternwarte, Prag, Bohemia (147); K. K. Central-Anstalt für Meteorologie und Erdmagnetismus (143, 147); K. K. Naturhistorische Hofmuseum, Vienna, Austria (147); Redaction der *Naturwissenschaftlichen Wochenschrift*, Berlin, Prussia (147); Verein fur Geschichte und Alterthumskunde, Erfurt, Prussia (142–147), Naturwissenschaftlicher Verein des Reg Bez Frank furt a O, Prussia (143, 146, 147), K Leop Carol Akademie, Halle a S, Prussia (147), Verein fur Erdkunde, Metz, Germany (147), Naturwissenschaftliche Verein, Regensburg, Bavaria (147), Zoologische Institut, Strassburg, Germany (147), Verein fur Vaterlandische Naturkunde in Wurttemberg, Stuttgart (147), Schweiz Naturforsch Gesellschaft, Bern, Switzerland (147), R Accademia dei Lincie, Rome, Italy (147), Dr Edward Pepper, Paris, France (147), Col William Ludlow, London, Eng (147), Historical and Library Association, Yonkers, N Y (25 pamphlets)

Accessions to the Library were reported from the Government Geologist Adelaide, Australia, Société R Malacologique de Belgique, Académie R de Belgique, Bruxelles, Belgique, K B Akademie der Wissenschaften, Munich, Bavaria, Naturwissenschaftliche Verein, Osnabruck, Prussia, R Istituto Lombardo, Milan, Italy, Prof Gabriel de Mortillet, St Germain en Laye, France, Mr Henry C Mercer, Doylestown, Pa, Prof Edmund J James, Philadelphia, Department of Labor, Washington, D C

The Committee appointed by the American Philosophical Society for the purpose of investigating the methods in use for the study of documents presented the following report

Organization was effected by the election of Dr Frazer Chairman

It was resolved that the future necessary business of the Committee should be transacted by correspondence and that the votes on all important matters should be taken in this way where personal meetings were difficult

It was resolved at the outset of our work that the portion of it which related to handwriting concerned itself with the characteristics thereof peculiar to the writer and their differences from the characteristics of other writers, but we specifically disclaim any connection between this study based on pure inductive methods and the so called science of Graphology which attempts to read in written characters the moral peculiarities of the writer

It was informally agreed that provisionally the Committee adopt the classification of the whole subject into “Bibliotics ’ or that which pertains to the study of records of any kind transmitting ideas from man to man, or the materials with which they have been made; "Grammapheny," or the study of written characters, and "Plassopheny," or the method for detecting fraud or falsification.

The stated business of the meeting being the report of the Finance Committee of the Society, the report was read and approved, and the appropriations for the ensuing year recommended therein were granted.

The election of new members being in order, the Chair appointed the following Tellers: Mr. Price, Dr. Morris, Dr. Frazer, and a recess was taken to allow the casting of ballots.

A paper by Dr. S. P. Sharples was read by Dr. Frazer, entitled "Notes on Photographic Testing of Inks," followed by remarks by himself on the "Evidences of the Action of two hands in joint signature marks" (*vide ante* pp. 471–478).

Dr. Morris called attention to the photographs made of the Codex Poinsett for its reproduction in *fac simile* under the direction of Dr. Brinton, Mr. Phillips and himself.

The original was written with three inks—one of them probably of animal, the second of vegetable, and the third of mineral basis. The latter, an iron ink, was so successfully photographed that many words almost illegible in the original are quite easily made out in the photographs.

Remarks on these communications were made by Messrs. Edmunds, Brinton, Mitchell and others.

Pending nominations 1332 and 1333 were read.

On motion, the letter of the Rev. Mr. Foggo was referred to the Secretaries, with directions to issue him a second diploma marked "duplicate."

Letters from Secretary Burpee, of Ottawa, and Superintendent Thomas, of Chicago, were referred to the Secretaries with power to act.

Treasurer Price offered the following, which was unanimously adopted:

Resolved, That the Treasurer and Librarian be directed to prepare two days before the election, to be held on the third day of January, 1896, an alphabetical check list of all the members who shall appear to be entitled to vote at said election, and keep the same written up in accordance with the laws of the Society for the convenience of the judges of the election, which list shall be at all times open to the inspection of any member.

Dr. Dolley moved that the courtesies of the Society be extended to the various scientific societies about to assemble for their annual meetings in Philadelphia, and that the Secretaries address them to that effect. Carried.

The report of the Tellers of the election was called for, and they reported the following election:

Mr. H. A. Pilsbry, of Philadelphia.

The rough minutes having been read, the Society was adjourned by the President.

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2241	James Legge	Oxford Eng	11
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2244	William Wundt	Leipzig Germany	11
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